

A  
NEW TREATISE  
OF  
HUSBANDRY, GARDENING, and  
other Matters relating to RURAL Affairs :

S H E W I N G,  
A plain and practical Method of improving all  
Sorts of Land, viz.

*Meadow, Pasture, Arable, &c.*

And of making them produce greater Crops of all  
Kinds, at much less Expence than it now costs.

W I T H  
Many New, Useful, and Curious IMPROVEMENTS,  
never before published.

The whole founded upon many Years Experience.

B Y  
S A M U E L T R O W E L L, Gent.

To which are added,  
Several Letters to Mr. THOMAS LIVEINGS,  
concerning his Compound Manure for Land.

---

*Si quid novisti rectius istis ?  
Candidus imperti, si non, his utere mecum.* HOR.


---

L O N D O N :  
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*To the Honourable the TREA-  
SURER, and the rest of the  
MASTERS of the Bench of  
the Honourable Society of  
the Inner-Temple.*

HONOURED SIRS,

 HE many Favours that  
Your Masterships have  
shewn to me from my  
first entring into your  
Service as *Steward*, and the Con-  
tinuance of the same, obliges me  
to lay this small Tract of *Agricul-  
ture and Gardening* before You;  
hoping you'll excuse the Presum-  
ption of presenting to Your Master-  
ships so small a Specimen of my

## DEDICATION.

Gratitude. And as You are blest with very good Landed Estates, (and may they so continue for all Ages to come) this is humbly offered for the Improvement of 'em in almost every Species of Vegetation of our native Plants, &c. which if pursued, as directed therein, will I doubt not make a suitable Increase to every Part of your several Estates; and will add also something to your Pleasure as well as Profit, which is the utmost Desire of

*Your most Dutiful,*

*Most obliged, and*

*Devoted humble Servant,*

Samuel Trowell.



T H E  
P R E F A C E.

**N**ATURE does not seem to have been more luxurious in any of her Productions, than of those of the Vegetable kind: Nor does any other Branch of Natural Philosophy yield a greater Variety for a curious Observer, to satisfy himself in the constant Order and permanent Regularity of all her Operations; which cannot fail to raise, in an unprejudiced and contemplative Mind, the most sublime Ideas of the omnipotent Author of so surprizing and so elegant a System of Things.

But as it would be equally presumptuous and impertinent, to pretend to trace and explain



vi P R E F A C E.

*plain the secret and hidden Springs of natural Productions, by Arguments à priori, we must be contented, especially in our Scrutiny into the Knowledge of Vegetables, to reason only from Experience, and the Use of such Means as have been accidentally discovered, to be agreeable to Nature, by aiding and assisting her in the Course of her Operations.*

*For this Purpose only the following Tract has been composed, in order to recommend in this Climate the universal Use of a certain Manure, lately invented by Mr. Thomas Liveings; which if it be applied in the exact Proportion herein after directed, will be found to produce the following Effects in Botany, Gardening, and Agriculture, viz.*

*First, By the saline, sulphurous, and other spirituous Particles in the Composition; it not only gives a large Increase of Seed, but inconceivably strengthens and invigorates every Plant which partakes of its Nourishment.*

*Secondly, If only sixteen Bushels be apply'd to one Acre of Land, it will effectually destroy all Sorts of Grubs, Rushes, Moss and Worms, causing the Meadows and Pasture Grounds to bring forth great Plenty of Grass, and the ploughed Lands to produce large*



## P R E F A C E.      vii

*large Crops of Grain of all Sorts, clear of Weeds and Smut.*

Thirdly, *It preserves the Turnips from the Flies, and kills Slugs, Snails, and all other Insects, which breed and harbour in the Roots of young Plants. It is also very beneficial to Hops, by making them produce stronger Vines, and greatly fortifies both Fruit and Forest Trees.*

Fourthly, *The Quantity required being so small and light, it may be carried into the Field in Sacks on a Horse's Back, without the Help of large and heavy Wheel Carriages, which in a wet Season often tare and spoil the Ground, besides their being attended with a much larger Expence, and Loss of Time.*

Lastly, *The innumerable Advantages which would flow from the Use of so excellent a Manner, would encrease Cultivation, support Numbers of the Poor, make the Tenant sit easy, secure the Landlord of his Rent, and give universal Content, by encreasing the Wealth of the whole Kingdom.*

T H E

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THE



THE  
QUINTESSENCE  
OF  
*AGRICULTURE, &c.*



CHAP. I.  
*Of* WHEAT.



HEAT being counted the best Grain for the Support of Life, makes Me begin with it; and to give you the Nature thereof, as 'tis to be produced by the new Manure, which is to be managed after the Manner following:

B

First,



First, Sift it well, to take away all the foul Part of the Seeds of the several Weeds, which generally grow among the Corn yearly, by which Means you'll avoid a great Part, which oftentimes grows up and destroys, or choaks the young Wheat in its Blade. After 'tis thus sifted, put it into some of the Liquid made of the Manure, about two Gallons or a Peck of the Manure mix'd with about ten Gallons of any Water, either Pond, River, or Rain Water, (and so in Proportion for a greater or lesser Quantity) the soaking of it will raise up all light and chaffy Parts of the Corn, which never grow. After it hath soaked about ten Hours, then take it out of the Vessel you have soaked it in, spread it on a Cloth on the Barn Floor till it is pretty dry, for in that Time the Kernel of the Wheat will have imbibed enough of the nitrous Quality of the Liquid; then sift some of the Manure upon the Seed, to prevent any Insect devouring it, for no Vermin will touch it after it is soaked, and some of the Manure sifted amongst it before 'tis quite dry; this must be done a Day or two before 'tis sown; but you may sow the Manure either before or after the Seed is sown: Sixteen Bushels will be enough for a common Acre; but in some Countries, where Measure of Land is large, you may put two more, for



for 'tis not a large Quantity that will answer the Farmer's End, so that every Part of the Land have some of it; for 'tis a very small Quantity of the nitrous Quality which serves Vegetation, if a very small Part touches the Fibres of the Roots, when an Excess destroys it. After the Manure is sown on the Land, then harrow the Seed, and that will mix it with the Earth; and every Shower adds to the dissolving the nitrous Particles, to feed the Earth, in order to prepare what gives Vegetation to the Corn.

THE Strength it will gain by this Method, when the Corn is sowed early, will preserve it against the Severity of the Winter; and the Manure is of that Quality, that the Frost will not enter the Earth, as it will what is not manured: all which hath been experienced by many Persons. But the Farmers ought always to sow their Wheat early, that is in the Month of *September*; for if too late, the Frost comes often before the Fibres of the Seeds have taken the proper Hold of the Earth, to preserve it self from the Severity of the Weather, and then it languishes, and turns yellow, as in Course it must when it is check'd in its first shooting forth of its Fibres, which are then tender, and many

Times upon a Continuation of a Frost die. So that those who will consult their own Interest must never be late, for thereby many Times their Labour and Seed are lost. When these Directions are followed, and the Ground put in such Order, as every good Husbandman ought to do, (for his own and his Family's Advantage) then he need not fear, by the Blessing of God, to reap a plentiful Crop. But I would advise the Farmer not to starve his Land, by Want of the Seed that he sows, for that may disappoint him at the last; two Bushels and a half is enough for an Acre. There have been very great Crops obtained by this Method, as is certified by the Widow *Lovejoy's* Letter at *Nettlebed* in *Oxfordshire*; whose Letter is at the End of this Book.

My Intent in this Treatise is not to swell the Book, by describing the Manner of the Grain, or the Use of it, which so many excellent Authors have already done, but only to discover by what Means a good Encrease may be obtain'd, that every one may enjoy a Part of it; which is the chief Design of this Treatise.

THE well ploughing of the Land is a very great Advantage to all Seeds sown, for that gives the Seeds in all kinds a greater  
Liberty

Liberty to strike into the Ground, and to fix their small Fibres therein for its Vegetation, and to prevent the Weather, be it Frost or Drought, to check it; therefore all Persons should be diligent as to this Point, for Ground cannot be too often ploughed, be it for what Grain soever, and the finer it is made, the more it will produce; therefore the letting Ground lie, as they call it, fallow, without any ploughing for half a Year or more, as in many Places, by letting the Weeds grow to Maturity, must consequently fill the Ground with their Seeds, and so hardens the Ground thereby, that the Dews and Rain cannot penetrate, which the ploughing would prevent to the Husbandman's Profit, if it was used: but Ground, though designed for the Fallow, may never lie fallow, but made to be of Advantage to the Farmer as to the Land, and also in respect to the producing Food for his Cattle, as will be laid down when we come to treat of Turnips.

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## C H A P. II.

## Of R Y E.

**T**HIS being the next hard Seed, should also be sown early in *September*, to have a Produce to satisfy the laborious Farmer for the Pains that he takes to bring his Ground in Order to receive each proper Seed; therefore the Seed must be used as the other, being first sifted, but it does not require so long soaking with the Manure Liquor; about six Hours will be sufficient, for 'tis in Nature more moist than the Wheat, and therefore will agree with lighter Land. The sowing of it early is for the same Reason as Wheat is, in order to get a sufficient Root to maintain itself against the Winter Season; and the Ground may be manured in the same Manner as before, and harrowed either before the Seed is sown, or after, as the Farmer, &c. thinks fit, for either Way will promote Vegetation when the Rains come, which we always expect at that Season of the Year, viz. *September*; but this and all Corn should be properly sown in dry Weather, and not wet, by reason the Seed might receive more Damage



mage thereby than some Persons may imagine; for any Grain lying a little in the Earth before it is wetted by Rain, prepares it gradually for Vegetation, and it does always prove a more certain Crop, than when the Wet falls too soon, which sometimes swells the Seed so much, that before the vegetative Part is prepared, the Seed is decaying in its first productive Part, by its over Moisture. This Caution is also to be observed in almost all the other Sorts of Seeds, for Field or Garden, except the Aquaticks, which delight in the moister Ground and Seasons; and is only hinted to the diligent and industrious Husbandman, by common Observations and Reason, that he may learn how to produce a good Crop of all Kinds; for all wish it, tho' many miss it, either by Neglect of Time, or by not being good and diligent Husbards in the improving the Ground. But if Gentlemen and Farmers would have Carts or Tubs, like those with which they water the Streets of *London*, one Cart with one Horse and a Boy would water any Ground so well as to make full Amends for the want of ploughing it; and should they water with the Soak of a Dung-hill, 'twill be of great Service to them, being a very good Sort of Manure, and a fine moistening to the Land.

## C H A P. III.

## Of O A T S.

**O** A T S are a Seed which require neither the steeping or soaking in the Manure as the others before named; but if the same Method was used in the sifting this Seed, and the putting it into some of the liquid Manure, to take off the light chaffy Seed, but not to let it lie in the Liquid any longer than in doing it, it would save the Farmer some Trouble, and prevent the Crop being choaked with Weeds. The Trouble is but small, in regard the Benefit is so great; then mix the Seed with some of the Manure before 'tis quite dry, to prevent Vermin destroying it, especially the Field Mouse, who loves this Grain more than any other. After the Gentleman or Farmer has sifted this, or any other Sort of Grain, and clear'd it from the weedy Seeds, let him not neglect either by himself, Farmer, or Servants, to keep such weedy Seeds from being swept to the Dunghill; for from thence 'tis carried on the Land, and the Weeds propagated thereby, as many Farmers have confessed to be so done by their own Neglect, and

and want of Thought. The best Method is, to leave these weedy Seeds to be devoured by the Poultry, Pigeons, and Hogs; and the same Method may be put in Practice by the Horse-keepers, when they sift Chaff. The Consequence of which is, that if there is but few or no Weeds in the Corn, the same may be carried into the Barn sooner, and then it need not lie so long exposed to accidental Weather, in order to dry the Weeds. See the Letter at the End of this Book from *Daniel Dodson, Esq;* of *Cheeshunt* in *Hertfordshire*.

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## C H A P. IV.

## Of BARLEY.

**B**ARLEY is a Grain of great Use and Profit, in respect to its Production of Beer, Ale, and Spirits, which occasions a larger Consumption of it than of any other Grain; therefore, to encrease the Produce of it, will prove of no small Service to the Publick.

FIRST, Do not omit sifting the Grain before it is sown, then put it into some of the Manure Liquor, as before; but let it

C not



not lie in the Liquor above six Hours, then take it out, and before it is quite dry, sift some Manure over it, and mix it well together, which will prevent its being devoured by Birds and Vermin; when 'tis sow'd, harrow it well, the Ground being prepared either before or after with the Manure, and the first Rains will let you see the Advantage you'll enjoy by this small Labour and Expende. Now, as to the Time of sowing this Seed, great Regard must be had to the Soil, which is heavier or lighter, as loomy, gravelly, or sandy. The usual Seed-time is from *March* to *May*, as the Country lies to its Situation, and the Nature of the Land: However, I think, for divers Reasons herein before given, that *May* is too late.

BE pleased to observe, in the next Place, that as there is a prodigious Quantity of this Grain malted for Beer, Ale, and Spirits; so it will prove of no small Service to the Person who malts it, to preserve the Liquor which the Barley is soaked in: For if that Liquor was saved in order to brew with it, it would save one Bushel of Malt in eight, and the Drink be much stronger and better. And supposing the Malster not ready for brewing, he might oblige some of his poor Neighbours with it, who would be very thankful



## Of BARLEY. II

thankful for it, when they come to know that, with a little Addition of Malt, it would make good Small Beer; for it has been experienced, that this Liquor is impregnated with an wholesome Spirit.

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## C H A P. V.

### *Of PEASE, and the several Sorts of Pulse.*

**P**EASE do not require the soaking in the Manure Liquor; for when they are soaked, and the Skin burst, the Pulp of the Pease is so soft and tender, that the Seed would be destroy'd thereby; however, Sifting is necessary in all Seeds, for there will be small weedy Seeds in all Grain, which being sown together, grow up and choak the Grain; so that Pease are often annoyed with small wild Tares.

THE common Method of sowing Pease is by Casting; but, for the Benefit of the Farmer, rilling is best; though many Persons chuse the Charge of setting them with a Dibber, about a Yard long, and set with Teeth about four or five Inches deep, and an Inch asunder: This is a very laborious

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Way,

Way, and double the Charge of rilling, which is soon done by the running the Plough lightly through the Furrows, and followed by a Boy, who may cast the Pease into the Furrow, not too thick nor thin; then let another Boy follow the former, and fill up the Furrow with his Hands or Hough. When the Rill is filled up, then let one of the Boys cast some of the Manure on each side of the Furrow; the doing of which will prevent all Snails, Slugs, or other Vermin from eating the young and tender Shoots at the first appearing, as is many Times done by a whole Field, which is often devoured by these and other Insects.

THEN if you cast your Pease by the Hand, you may sow the Manure first; after that sow your Pease, then harrow the Ground well, which mixes the Manure with the Ground; but I take it, that rilling of the Ground, about a Foot or more Distance, will be found the securest and best Way to preserve them from the Fowls, that hunt after this Grain more than any other, as Hens, Pigeons, Crows, &c. also that then when they are up, you may hough them, by which it will add a new Vigour to the Root, to make them haulm and blossom better; and, by this sowing the Manure of each side of the Rills, will be a sufficient Supply

Supply to the Roots of the Pease to support its Vegetation to their full Growth; and 'tis the same in the Garden, where the like doth happen. Therefore if the same Way of rilling is used in all the several Species of Pease, you may always depend, if the Season permits, on having a very good Crop; and 'tis the same in any other Sorts of Pulse, as Tares, Fetches, Lentills, Lupines, &c.

I remember that a very good Gardener advised to have a Field sow'd with the Everlasting Pea, and not to let any Cattle eat it the first Year; the second Year you may let Sheep and Lambs eat of it, and after 'tis eat down, let it rest about three Weeks or a Month, it will be Food again, and will give a Food to Yews, and add to their Milk, being a very luxuriant Juice, when fresh and green; for after it hath taken Roots, 'twill last many Years, without any fresh Sowing or Setting; and if you let it flower, 'twill produce a great Quantity of Seed to supply other Parts.

AND the like of a Gentleman in the *New Forest* in *Hampshire*; who having sow'd a Field with Parsley, he told me it did more Service to his Sheep and Lambs, then twice that Quantity of Ground in any other Grass.

C H A P.



## C H A P. VI.

*Of BEANS, the several Sorts ; and  
also FRENCH BEANS.*

**T**HE Culture of this Seed is much like the Pease ; for, 'tis to be observed, they will grow well without soaking in the Manure Liquor ; for the same Danger is in the Bean, as before in the Pease, in respect to the swelling and bursting the Skin, which may destroy the Pulp of the Bean.

BEANS require a stiffer Ground than Pease, and will not like a dry Ground, by its Nature ; they are set in Rows with a Dibber, especially the Broad-Bean, be it in either Field or Garden ; and after the Holes are filled up, or covered with Mould, then on each Rill put some of the Manure along each Row, but not too thick, for a little will do, which will not only preserve the Bean, at the first appearing, from Slugs, Snails, or any other Vermin from eating it ; and every Shower will feed the Roots or Fibres of the Bean, to bring it forward to its full Growth ; and if the Plat of Ground,  
in

in Garden, &c. is not so large as a Field is, the Sowing of the Manure over the whole Piece, after the Beans are set, will increase them both in Quantity of Stalk and Height very much: Let the Proportion be of sixteen Bushels of the Manure to an Acre.

I have seen by setting the *Portugal* Hot-Spurr on a Plot of Ground about the Beginning of *December*, after the Beans was set, and the Holes filled up and raked smooth, the Manure was sowed thinly over the Ground: That in the Spring the Beans grew and flourished beyond the Nature of that Specie or Sort of Beans; (for commonly they are not above two Foot in their Height, and Pods in Proportion) these grew to four Foot and some to five Foot high, with an hundred Pods on some Stalks, and many had two or more Stalks, and as large as some broader Beans, which were the Wonder of many that saw them.

As to Horse-Beans, being a much smaller Sort, 'tis the best Way to set them in Rills, tho' many take other Ways, as Casting by Hand; but if the Farmer will try this Way by running the Plough along the Field, and putting the Beans in the Rill after the Plough, and let them be covered by a Hough or otherwise, as was before said by the Pease,  
and

and if he sets them at the same Distance, by reason of having the Conveniency of houghing them; after which covering them with some of the Manure on each Rill, it will save Time and Expence in the Sowing or Setting, and prevent Fowls, &c. from devouring the Quantity that is done by the Casting, and also preserves the young Shoots at their first appearing.

ALL *French* Beans should be sown the same way, by which means you will preserve many Crops that are devoured by the Slugs, &c. as very often happens to the Gardeners about *London*, and elsewhere; for at the Time of Sowing the *French* Beans, being *April* or *May*, the Slugs, &c. are very troublesome.

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## C H A P. VII.

### Of TURNIPS.

THEY are a small Seed that does not require any Soaking, the Ploughing of the Ground well, and sowing of the Manure either before or after the Seed, will do; but harrow the Ground well to mix the Seed with both Earth and Manure; sixteen Bushels



Busshels of the Manure is sufficient, except as 'tis before said; if the Acres are large, then add about a Busshel or two more, the Manure preventing; on the first coming up of the Seed to leaf, the Fly from eating it, as many Times is done by the destroying whole Crops; and the Farmer, &c. have been obliged to sow two or three Times before his Crop has set. The Manure makes them apple well, and also produces a thinner Rind by the free growing of it; also it gives them a better and sweeter Juice than what grows from the Produce or Force of Dung, as hath been found by Experience, by those who have had full Crops when their Neighbours have miscarried, and have been forced to sow several Times the same Year.

THE Seed being so small, it may be mix'd with any Sort of Sand to prevent its falling on the Ground in Clusters, as many Times it does, and grows too thick, which is a great Expence as well as Trouble to the Houghers in setting them out to apple; this Way of mixing the Seed may save a Time of Houghing, being generally three Times over to make them apple better.

THIS Root is become very much in Use in divers Counties in this Kingdom, and become the Food of Beast and Sheep, &c.

D

which

which are thereby fatted, and produces good of each Sort: Now those that are given to Beast should have either Straw or Hay to dry up the Moisture, for 'tis a Food too moist alone for Beast.

THE Turnip must be given whole, not cut too small, if where they are large, when they are put up in Stalls to feed, for many a Bullock hath been lost by swallowing a small one too eagerly without chewing; to prevent which, in *Norfolk* and *Suffolk* they have a Rope made stiff of about an Ell long, and fussy at one End to put into the Gullet or Throat of the Beast to preserve its Life, when such an Accident happens, (being first rubbed with Butter or Fat).

SHEEP feed also fat on this Food, and will eat them very close to the Ground, but they should not be suffered to run or feed over a large Ground at a Time, for by so doing they'll spoil more than they eat, by biting, and leaving them so bit; for the first Rain that falls on a Turnip that is bit, and lodges in the Hole, destroys it, and it will rot and stink soon.

THEREFORE, to prevent this Evil, Hurdles or some other Partition should be put up a-cross the Field where the Turnips are,  
and

and if another Field was near when their Bellies are filled, it would be convenient for the Sheep to walk in, and to lie down; for where they lie they taint and spoil the Turnip, so that a great Quantity is lost that Way.

Now when your fat Stock, either of Beast or Sheep, have eat up the Turnips pretty close, then let them have fresh; and let your Servant pick up all the Turnips that are bit and left on the Ground with a Picker made for that Purpose; after this done, put in your lean Stock, either of Beast or Sheep, and they'll pick up every Bit, so none is wasted.

Now where Grass is scarce in the Spring, and as there are many Countries without Grass, and Cattle oftentimes (if Hay is not plenty) pine away till the Grass comes; and many Times Yews drop their Lambs early, and having no Food, both Yew and Lamb is sometimes spoilt.

Now, To prevent this, let those Grounds, that you intend to lie Fallow, be about *Michaelmas* ploughed once, and sowed with the Turnip Seed, and let it grow wild and not hough it; at the Spring you'll have a fine Food for all your Cattle at a little Expence,



## Of TURNIPS.

for a little Seed sows an Acre, you may divide the Ground as is before directed; also if you have another Ground for them to walk in, 'twill save your Crop the longer.

## C H A P. VIII.

## Of CARROTS.

**T**HIS is a Root which is small and light in the Seed, though, in a good Ground, it produces a large Root; if it is a sandy Soil it likes it better, and will shoot a great Depth into the Ground; but if a stiff Ground, it will grow stubby, and not draw a long tap Root as otherwise: The Ground must be dug two Spades deep, and if ploughed, as they do in *Norfolk* and *Suffolk*, where they plough many Acres, they plough it with a Hand-Plough after that, in the same Furrow they plough with a Wheel Plough again; and raise the Earth as much, or deeper the second Time, as their Strength of Horses, which is three or four, can well do, and upon the Share fix a Weight of a hundred Pound or more to make it strike the deeper, for then the Root is the larger and longer, whereby the Ground is made the lighter for its Vegetation; if Stony, the Roots are

are checked, and do spread into many Fibres, and hinders the Root from growing or shooting downright: The Manure must be put on after the Ground is ploughed.

Now when they sow a Field the Sower always goes backwards against the Wind, which separates the Seed that it does not lie in Clusters, as it is subject to do; but if it is mixed with a little Sand, it will separate the Seed the better, and prevents it falling in Clusters, and it will be the easier to hough, when they come to be set out.

Now this Root is not only used in Families, but is good Food for Horses, Hogs, and many other Cattle which feed on it eagerly, and fatten, as in those Countries many do, to their great Advantage; and sometimes one Acre is sold for ten or eleven Pounds.

THEY that give it to their Horses pull them up, and wash the Sand or Dirt from the Roots in a Tub, the Tops being cut off, then the Carrot is put whole into the Manger, mixed with Chaff; the Roots must not by any means be cut, for the Horses eating of it eagerly, they may be subject to be choaked: If no Chaff is to be had, then chopp'd Straw will do, for it is too moist a Food

Food alone ; and when it is given to the Ox or Cow, either Hay or Straw must be given them, by the Reason of the beforementioned Moisture : As to what is given to Hogs, they eat it raw, but if boiled with any other Sort of fowl Corn, it will make them thrive the better, and sooner fat.

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## C H A P. IX.

## Of BUCKWHEAT.

**T**HIS is a Seed that is the latest sown of any, as in *May*, yet it may be sown on any barren Land ; but then it would be proper for the Husbandman to sow the Lands, that he designs for Brank or Buckwheat, with sixteen Bushels of the Manure early, that is, in *February* or *March* ; by which Means the Ground may receive the Benefit which the Manure gives ; for if it is not sown then, the Heat of the Season being *May*, may hinder it from meliorating the Earth, as it will, if sown early : When you sow the Manure, harrow it well, then let it lie 'till you sow the Seed ; you may steep it ; as for the Barley then let it dry a little, and before 'tis sown sift some of the Manure over it ; when 'tis so sown, you need



## Of BUCKWHEAT. 23

need not fear a good Crop, if not prevented by any Accident of Weather ; this is good for Fowls, Hogs, or any other Cattle, though it is eat and made Bread of in dear Years ; and 'tis often mix'd with the best Flower, being so white in its kind.

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## C H A P. X.

### Of CLOVER, CINQUEFOIL, *and* LUCERNE.

**T**HESSE are several Sorts of Grass Seed which have been brought from abroad, and have thriven very well with us in these Parts, and produce great Crops of their several Kinds for Hay, and may be mowed twice a Year, and if a wet Season oftner ; But if after the first Mowing you intend to save Seed, they must not be mowed a second Time : All Cattle love these several Sorts of Grass ; as also the Hay made from each, which they feed eagerly on : Care must be taken when you put your Cattle into Clover first, for they will eat of it 'till they burst, it being so pleasant to them : If you sow these Seeds alone on your Ground, then put sixteen Bushels on an Acre of the Manure ; but if you sow them to come after

after your Corn, as is many Times done, then the Manure that you sowed with the Corn is sufficient for its Produce.

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## C H A P. XI.

## Of H E M P.

**T**HIS is an useful Seed, and from it proceeds a great Commodity, and a great Quantity of it is fetch'd from abroad, though we have many Places in our own Country would produce great Quantities; which, if it was more encouraged, would save many Thousands of Pounds to the Nation, that is now expended in our Cordage for Shipping, &c. and it might be made a Staple Commodity, and would employ many thousand Hands that now want that Assistance; and as we see other Nations, as well as the *Dutch*, make all their own Cordage, &c. 'tis Pity that we should be so idle as not to act as they do, having much Land, that would produce great Quantities, which is hardly good for any Thing else; as about the Isle of *Ely*, and all that Tract of Land that runs up to *Wisbech*, *Bedford* and *Lindsey* Level, and Part of *Lincolnshire*; being, as I am told, more than  
three

three hundred thousand Acres, which are the most proper Lands for the Produce thereof, and might produce as good and strong Hemp as any comes from abroad; by which means we may export by our Merchants to every Part, as well as employ Ships to fetch it; this would improve our Trade as well as our Lands; and also will encourage the Industry of many Families in those Countries, who are sinking under the Want of such a Benefit, and the Lands made but little of, which might by Industry yield vast Products of this Kind. The Use of this Hemp is great to many, as well for the Cordage for Shipping, as for almost innumerable other Uses; and no Family can be without it, in its Use in some Way or other, nor any other Employment but requires its Use in the like Case. Therefore should not all the Diligence that is possible, be to obtain this Commodity, which is so much required in all Acts of Arts, &c. and may be very easily rais'd; and what is more, requires so many Hands to work it up into the several Uses that it is call'd for in all Sorts of Ways, so that almost both Sexes, from the oldest to the Infant of about six Years of Age, will find a Maintenance; the Seed of this is sold almost in every Country; 'tis said that three Bushels sows an Acre, 'tis sowed in *April*, and if great  
E Care



Care is not taken of it, the Birds will devour a great Part of it, therefore they generally set a little Boy to watch and hoot, to affright them away. Before the Seed is sown let the Manure be sown over the Ground and harrowed well, by which means you'll have a great Crop, and Stems grow off the Hemp like a little Coppice, from whence you will have a very great Increase of Seed if you let it stand so long as *Michaelmas*; but about *Lammas* is the Time of drawing it for the Summer, of what is then ripe; you must pull it up gently, and not break it, for what is broke is spoil'd: When the Crop you have left for Seed is ready, which will be about *Michaelmas*, or a little before, you must then pull it, and bind them up in Bundles, called a Yard Hand; you must stock it up in a Barn or some dry Place; then in the Season thresh it to get out the Seed, and when you are ready to peel it, to sell rough, you may tie it in what Bundles you please: Those that dress it by Brake or a Tew-Tow, and prepare it for the Use of their Families, know the Nature of its Work to bring it to be spun: Now one Acre of good Hemp is worth from Five Pounds to Eight Pounds an Acre; but if it be wrought up, it may come to from Eight Pounds to Twelve Pounds an Acre or more.

## C H A P. XII.

*Of* F L A X.

**T**HE Sowing of Flax is of as general a Use as before of Hemp, which will employ a great Number of Persons in an honest and laborious Way, and many thousand Hands are employ'd abroad to a very great Benefit, as is known in *Germany, Holland, Flanders, and France*; and large Sums have for many Years past, as well as at present, been annually sent out of this Land for the Produce of it in every Species of what Flax is wrought up in; not only in Cloth of divers Sorts, but Thread of divers Sorts: But at this present Time, and for some Years past, by the worthy Encouragers of the Linen Manufacturers, *Ireland* is become in a few Years the Wonder of all *Europe*, who have brought to such a Perfection their Linen-Cloth, that in Fineness it is a Parallel to any made in any of the before-named Places, and may in Time produce an equal Part with any other Country. The Import to these Parts shews the Industry of them; and as they are a People under the Government of the same Prince, we should

join all that in us lies to reward them with the Use of it in general : And as this Kingdom has Land in many Places that will and does bear good Flax, especially, 'tis said, that about *Maidstone* in *Kent*, where Thread is made from it, that is the best in these Parts ; and as one Acre will bear Flax to maintain many Persons for the compleating of it into Cloth, therefore we should shew our Industry, as other Nations, to bring it to be with us a Staple Commodity. The Flax Lands require the same Husbandry as Corn, both in ploughing and sowing ; therefore to add to the Increase of it both in Quantity and Strength, the Manure should be sowed on the Land, as for Corn ; and the Care of the Husbandman is required in the Weeding of it : It may be sowed in *March*, though some sow it the latter End of *February* ; the East Country Flax Seed is counted the best, but the second Crop of our own Seed is counted good, being saved from that of the East ; two Bushels sow an Acre : In some of the colder Countries they do not sow it till *April*, as in *Warwickshire* and *Worcestershire*, &c. it must grow to its full Ripeness, which may be perceived by the Hurl and Seed : When it is ripe, get your Hands to work to pluck it, and then tie it up in Handfuls, and set them upright  
one



one against another, like a Tent, 'till 'tis perfectly dry, then get it into the Barn, till you want for the proper Uses of the Family, &c.

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## C H A P. XIII.

## Of RAPE, or COLESEED.

**I**S a Seed to be planted in Fenny Marsh Land, or Land newly recovered from any Inundation, or any coarse rank Land of any Kind, that is not fit at the present for Corn; the chief Care is to have good Seed, the largest is best, which is to be had in many Parts, but that from *Holland* is counted the best; the Season for the Sowing it is about *Midsummer*; the Land must be well ploughed and made fine, about a Gallon of Seeds sows an Acre; it is better to mix it with some dry light Earth or fine Sand, to prevent it growing in Clusters; many Persons sow it only for the Benefit of the Produce of Seed, which if for Seed only, Care must be taken that when the Plant is grown up and set for Seed, that is, begins to turn brown, you must reap it as you do Wheat, and lay it up together, two or three Handfuls in a Bundle, till it be dry, for about a Fortnight;

Fortnight ; it must not be turned or touched, if possible, for Fear of shedding the Seed ; it must then be gathered in Sheets, or rather a great Sail Cloth, and so carried into the Barn to thresh it, tho' many Persons thresh it in the Field, by reason it is so subject to shed, the more Hands you have the sooner it is done, for Fear of Rain, when threshed in the Field : The Seed is worth about four Shillings a Bushel, and if a good Crop, it will yield about ten Bushels an Acre, or more if a good Season. It is a Commodity that will not want of Sale, the more you have, the better Price it bears. It is used to make Oil ; there may be some Turnip Seed grow among it, which will make Oil also : It grows best near the Water.

THOSE that sow it in Grounds about the Isle of *Ely* and other Parts of *Cambridgeshire*, and some Part of *Huntingtonshire*, &c. feed many hundreds of Sheep fat to a very great Advantage, and are sent up to *Smithfield* Market, and sold there in great Numbers. Now when the Ground is ploughed and made fit for the Seed, then you may sow the Manure either before the Seed or after, by which you will have much greater Crops and stronger ; and after the Seed is off, the Edish will feed Sheep very fat.

C H A P,

## C H A P. XIV.

*Of WELD or WOULD for the Dyers Use.*

**T**HIS is a rich Commodity, and beareth a long greenish yellow Flower, which runs to a small Seed, much smaller than Mustard Seed, and very thick set: It flourisheth in *June* and *July*, and in some Places it sows itself, and groweth wild; and considering the little Charge of it, it brings great Profit to the Sower, it being of so great Use in the Dyers Way for their Yellow; for it grows upon the poorest Land, if it is light, not worth Twelvepence *per* Acre. It must be dry Land, and the Cost is but little in the managing of it; it requires but little tillaging or harrowing; it may be sowed with your Barley or Oats, without any Addition of Labour, or of the Manure, that being first sowed with Corn, only drawing a Bush over it, or a Roul, either of which will cover it after it is sow'd: 'Tis with this Seed, as with many others, being small, the Difficulty in sowing; but as is directed before, it must be mixed with Sand or fine dry Earth, to be sowed even, and not in Clusters; about a Gallon  
of



of Seed sows an Acre; the Sower must often stir the Mixture with the Seed, to prevent the Seed falling to the Bottom: The Seed thus sowed may grow up among the Corn, and will be no Prejudice, because it groweth not fast the first Summer; but after the Corn is cut it must be preserved, and the next Summer a very great Crop: When it begins to be ripe, then you are to watch it, for if full ripe the Seed will scatter, and if not ripe it will make the Seed not perfect, nor your Stalk neither; therefore Care must be taken both about the Seed, and ripening of the Stalk, and as soon as you perceive them to be come to a perfect Ripeness, then pull it as you do Flax by the Roots, and bind it in Handfuls, and set it to dry until both Seed and Stalk is dry; then carry it away to some dry Place, that the Seed be not lost, till you get a Sale for it, from the Dyers, who many Times give a very good Price for it, and will go far to buy: It has been sold from Three Pounds to Twelve Pounds an Acre; and more, if you keep it till *March*, together with the Seed; and then get out the Seed, it will sell about ten Shillings a Bushel, or more, as the Market rises or falls; the Stalk and Root are both useful, and must go together, and gives the bright Yellow and  
Lemon

Lemon Colour; the whole is reckoned not above Fifteen Shillings *per* Acre: The best Place to get Seed is about *Canterbury* in *Kent*, or *Wye*, where you may see both Land and Growth. It is sold by Weight often, as so much a Hundred, or by the Tun.

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## C H A P. XV.

*Of WOAD or WADE, the best Land for it, with the Usage of it, and Advantages thereby.*

**W**OAD is also a valuable Commodity, and is the real Foundation and Solidity of many Colours: A woaded Colour is free from staining, and excellent for holding its Colour; nay, any dark or sad Colour must be woaded, to fix its Colour: It was one of greatest Profit to the Masters, of any Fruit the Land did bear. It hath flat long Leaves, the Stalk is small and tender, the Leaves are of a bluish green Colour, the Seed is like an Ash-key or Seed, but not so long, with little blackish Tongues; the Root is white and simple: It is a very good Seed to grow, and thrives well, and beareth a yellow Flower on rich Land, that is dry and warm, or a little  
F sandy;

fandy; though the Manure helps it, if very rich, to bring forth a better Crop; sixteen Bushels on an Acre put on the Land when the Seed is sown; 'tis better on the Hills Side, where Lands are good Pasture, for the Bottoms will not do; but the chieftest is your home, coarse or lesser Grounds, lying near a Town.

THERE has been of this Woad in some Parts of *Warwickshire, Worcesterhire, Oxfordshire, Gloucestershire, Northamptonshire, Leicestershire, Rutland, Bedfordshire, and Buckinghamshire*; and many other Places, here and there, hath this Woad Land, which must be very sound Land, and near Three Pounds *per* Acre hath been given to sow this Woad on; for 'tis taken by the Operator for so many Years, to work the Land, as shall be agreed for: The Charge of making this Woad is great, though it pays well at the End. It must be well ploughed; if the Ground is hilly, they must be cast; they generally plough outward, or cast all their Lands at the first ploughing, and after harrow it well, then sow it with about four Bushels of the Seed; and after the well harrowing, pick it clean of Clots, Turf and Stones: when the Woad begins to grow, weed it well; then as soon as the Leaf is ready to cut, and having all Hands and Things



Things necessary, which may be sooner or later as the Season is; your Mill being prepared with a Double Wheel, and the Tooth or Ribs, that cut the Woad, are placed from one Side to the other, very thick wrought, sharp and keen at the Edge: As soon as the Woad is cut, and comes out of the Field, it is to be put into the Mill and ground, one Kilnfull after another, as fast as may be; the Juice of the Leaf must be preserved in it, and not lost by any Means: When ground, 'tis to be made in round Balls, about the Bigness of a common Ball, and laid one by one to dry; and as soon as dried, then put them together, and others put into their Places to dry.

THE Time of Sowing is the Beginning of *March*; and, from the Beginning of cutting the Crop, lasts till Autumn; then the Season will not ripen it, as before; and then the Mill is at Leisure to grind it all over again; then you may make it stronger or weaker as you please; for from this mixing of the Woad makes the Difference between Woad and Woad, that the Dyers will hardly buy any Parcel, till they have tried it in Colouring, for there are three or four Sorts of Woad proceeding from each Time of Cutting; 'tis ripe in *June*; sometimes two Cuttings, and so on every Month, while the

Season lasts: Often in making up they put two or three times Cuttings together, but the first Cutting is the best, which is called the Virgin Woad: The less Mixture it has the better; the manner of Seasoning is thus; when every Crop is cut, ground, ball'd, and dried as dry as possible, and laid up, every Crop by itself; then take either first or second Crop, or more of your best Sort, and grind them to fine Powder, and lay it on a Floor in a Heat or Couch, and mix it with Water, and turn it over and mix it again; then turn it again over, and give it as much Water as it will soak, but not drown it; it must be turn'd in the Couch once a Day, for three or four Weeks; then twice a Week, till it comes to a right Colour: Many Hands must be employed in carrying of Water at first till it is soaked; you must not let it heat too much, but keep it in a moderate Station, which you may prevent by turning of it. In the Couch it will alter and change Colour divers Times; it will be hoary, mouldy and frosty, and smell strong, and in a little time black; then it will hoar and mould again, and change whitish; and after this second Change, it will come to a perfect black; which the brighter and clearer it is the better; this is generally the Winter Work: Then lay it up in Heaps, with a Pole in  
each

each Heap, to prevent its heating again; and so let it lye for Sale. It has bore many Prices, from Six Pounds a Tun to Twenty or Thirty Pounds a Tun; and doth generally pay the Master well after all his Care, Trouble and Expence.

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## C H A P. XVI.

## Of M A D D E R.

**M**ADDER is also a Plant that the Dyers use; 'tis of a red Colour in dying; and is what they make, as they call it, their best solid red. It is planted some of it in Gardens, for the Use of the Apothecary, being medicinal; when 'tis well cultivated, and Care taken of it, it will produce great Profit; there hath been Attempts made to gain a Patent from the Crown for the sole making, but 'twas not granted, though it would have been of great Advantage in general for to have encouraged it, and have made it one of the staple Commodities of the Nation.

THE Seed of it is not so well to be carried on for the Work, as the Setts from an old Root of one or two Years old; they  
are



are to be had of Gardeners, who keep them for this, and other Uses: They are to be drawn in *March* and *April*, or as soon as they are sprung forth of the Ground two or three Inches long; let your Setts have some Fibres of the old Root to them, or else you may run the Hazard of losing them, if a dry Season happens; when you take the Slips from the old Roots, put them into a Basket with some Mould, to keep the Winds from hurting them, being tender, Your Ground that you put them into must be well prepared; and, if possible, the Manure sowed on it before *Christmas*, and ploughed then also, by which the Ground will be well prepared to receive the Setts in *March* or *April*; it must be a warm dry Soil, and ploughed deep, or dug so, and laid very even or level, then run it out in long Beds, about one Foot or more asunder, put in your Setts about a Foot asunder, and if a dry Spring, they must be watered, until you may perceive they have recovered their transplanting; you must hough it, or weed it, that they mayn't annoy the Plants, though 'tis but like a Weed itself; good Weeding the first Year is the best Preservative unto it, and some few Setts may be taken off, but 'tis not so well as the second Year, when you may take up what Setts you please; always leaving one or more to top or draw  
the

the Plant ; then you may get what you want for the Dyers, Drugster and Apothecary, and the Setts to plant again : In taking up the Root there will be, as 'tis observed, one Runner, with little Buds out of the Ground set upright, which will make many good Setts ; but the Madder must first be got, before those can be come at : When a Crop is got, it must be carefully dry'd, as you do Hops ; the Workman must pare it to get out the Husk, which though not so valuable as the other, is worth about Ten Shillings a Hundred : Then there is another Sort, called the Number (o) which is the middle Rind, that is not worth so much as the third Sort, called the Crop Madder, by a sixth Part ; but the Crop Madder is the very Heart and Pith of it, inclining to yellow. This best Madder is worth Eight or Nine Pound a Hundred ; and the Number (o) is worth about Six Pounds, and sometimes less. The Dyers use great Quantities of it each Person ; and if 'twas well cultivated in this Kingdom more, it would enrich it much.

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## C H A P. XVII.

## Of SAFFRON.

THERE is another valuable Commodity, and that is Saffron, of which this Nation enjoys the Benefit of the best Sort; and as this Saffron is medicinal, and very sovereign as to its Effects in many Cases, therefore 'tis coveted in every Place, if it could be made to grow freely; but the chief Place is at *Saffron Walden* in *Essex*, and Part of *Cambridgeshire*; and in many Gentlemens Gardens, where Ground is prepared for it.

THE properest Time to raise a new Plantation is about *Midsummer*; when you have prepared your Land in Field or Garden, being a light dry Ground, if a little loomy the better, then make your Beds with a proper Space to walk of each Side together, without treading on the Beds; then plant your Roots about three Inches deep, and about two or three Inches asunder, and so do till you have filled the whole Ground, or Bed in each Spot; it may yield you a tolerable Crop the first *September* after sown, but the second Year more; and the best  
Time



Time to use the Manure on the Land is about *Midsummer*, when all the Leaves are off the Ground, and by *September* you'll find a great Strength in the Roots, as well as Flower; it cannot be said any Addition of Chives will come, there being only two or three as has yet been observed, but that may be thicker and better in kind, by which a greater Weight may be produced in the Bulk; it must be watched in the Morning, else the Sun dries it up and spoils the Chive; the Beds produce Saffron for near a whole Month when it comes to blow; when you have gotten the Saffron, 'tis commonly dry'd in a Kiln made of Clay, with Charcoal; and 'tis said, that three Pounds wet will dry to one Pound, which I conceive is over-doing it, and must prevent the Virtue of Saffron to act as it would, not so dry; for that Juice so dried can never be recovered for any Use; tho' it may be said to keep better so dried, and longer, being moist in Nature: I have known small Quantities of an Ounce or two gathered in a Garden, put only in a Bladder, and kept in the Pocket; which small Quantity so dried, hath been kept two Years or more; and one Chive or Blade so dry'd have answer'd as much as three or four of that dry'd by the Kiln; but larger Quantities can't be thus dry'd; but 'tis only

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observed,

observed, that it may be dried too much ; for if the Juice of Herbs was so dry'd, whether they then would emit or yield as strong a Juice as being dried in a moderate Way. An Acre of this Saffron has produced fourteen or fifteen Pounds ; but if seven or eight Pounds, it does pay well : It has been sold from One Pound Sterling to Five Pounds a  $\text{lb}$ . And it may be worth Thirty Pounds an Acre, or more, if the Season hits.

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## C H A P. XVIII.

### Of MEADOW and PASTURE- GROUNDS.

**T**HESE Grounds should be sowed with the Manure, sixteen Bushels to an Acre, before *Christmas*, that it may receive the Moisture of the Winter Showers ; and when the Spring comes on, you'll then see the Benefit of the early sowing of the Manure ; which will not only feed the Roots of the Grass, but doth encrease and bring forth a new Sort of feeding Grass of the Trefoil Kind, &c. if the Land had none before, though any Grass Ground may be sowed with the Manure at all Seasons, when the Grass is short, and the first Rain that falls

falls prepares it for the Act of Vegetation; but the Winter Season is the properest Time, which all will find that use it.

GROUND sow'd with this Manure produces such a Grass, as all Cattle delight in; as hath been experienced by those that have sow'd a Part of a Ground, and left the other without sowing any Part of it; for the Cattle have fed on the Part manured, and kept it bare, when the other Part has grown, and been ready to mow, and neglected it; and it will make Cattle thrive faster than any other Ground adjoining, and not manured.

SHEEP feed extraordinary on the Lands sow'd with this Manure; and what is more, that they will never rot, where 'tis continually sown; and will cure the same, if not too far gone before they are put in: Especially if the Ground is not too wet, and they have the Advantage of lying dry.

LIKEWISE those Parks that have been sown with this Manure have produced better and fatter Venison, be it of Buck or Doe, then was there fed before, and much sooner. The mow'd Lands have also had much greater Crops for Hay, and the Hay so much better, that every one by feeding  
G 2 their



their Horses or other Cattle with the Hay, will presently experience, by the great Improvement of them that are fed with it.

ALSO Bowling Greens watered with the Lixivium of the Manure, soaked or sowed on it when the Worms, &c. come up, will destroy them, and rid them of all those troublesome Reptiles; for none will live where 'tis either water'd with or sow'd on the Ground, as hath been experienced by those who have tried the same; and will keep it in the best Order for the Use of the Gentlemen of Pleasure. Grass Seeds sown at the Time with the Manure, either before or after, will produce an incredible Crop the next Season.

Now as to the feeding of Beast with Hay, every Country have not the Method of making their Hay suitable for that Purpose; for those Countries that do feed Cattle with Hay to fat in Winter, generally cut or mow their Grass while the Sap is in it, and don't let it stand till 'tis dead at the Bottom; for then the Hay has not that Sweetness, as it should have for that Purpose for the Beast to feed on: Next let it be well made, not to let it lie in the Swarth till it is dead and musty, that the Air cannot recover; but let it be tedded as soon as mow'd;

mow'd; then the Hay (being daily attended) will be green and sweet, which will induce the Cattle to eat it with Pleasure, and thrive almost as fast as the natural Grass. And if it has that which is called the Mow-burn (though not too much of it) the Beast delight in the Smell, and will eat it eagerly; which causes the Beast to drink, and from thence, if the Water is good, it makes the Beast thrive the faster.

Now as there is a singular Care to be taken in the making the Hay, so there is also a Method in giving it to the Beast, in order for his thriving; 'tis not to be taken from the Stack in Flakes, as 'tis put on, but it must be cut about six Inches long, with a Hay Knife made for that Purpose, by which means the Beast will with more Ease chew it sooner, and fill his Belly; and when that is done, lies down with Pleasure to chew his Cud, for then he thrives; but if the Hay is long when given to him, 'tis some Time before he can chew it, to swallow it, so as to get a Belly full, that he'll be tir'd before he can fill it, and never get fat; then it must be given to him a little at a Time, and often, by which Means he will not blow upon it; for if he does, then he will refuse it, and will not eat it.

Now

## 46 Of MEADOW, &c.

Now to prevent this Inconveniency, 'tis proper to put your Hay Stack in the firmeſt or dryeſt Ground you have, that will not potch or tread, and to rail or raddle it about : And when you come to fodder your Beaſt, add a little raddle Hedge, about two Foot high, and about three Foot wide round your firſt Rail or Hedge ; and there put your Hay (it ſaves a great deal of Labour in carrying of it about the Ground, or if you put it in a Rack made for that Purpoſe, and leſs waſte) the Beaſt will eat it without treading on it, and hunting each other, though the Maſter Beaſt will pick where he likes.

Now when they have filled their Bellies, 'tis very much for their Advantage to have a running Water to go to drink at ; for Water is the Life of every thing, and in nothing more than in Cattle. Standing Water (except 'tis a large Water, where the Air and Wind ſerves to purge it) is not ſo good for Cattle ; for when they enter into ſmall Ponds to drink, they by their treading ſpoil it for a whole Day ; by which Means the Cattle ſtands round the Water, and never drink, being always deſirous, but will not touch it, which hinders them from thriving for want of good Water, for no Cattle thrive that do not drink heartily ; and if the  
Ground



## Of MEADOW, &c. 47

Ground is large you fodder on, it is the better ; or two, if they open one into the other ; for they are pleased, and seem to lie at more Ease.

Now as to the graising Part, the feeding of Cattle on Grass Ground ; the first Care is to have for your Cattle good Water ; for if your Grass Ground is not of the best Sort, they will gather Flesh, and by length of Time will be fat, but not so soon as where the Cattle have Grass and good Water to feed and drink of, as they have in many Parts of this Kingdom, viz. in the West Country, in *Buckinghamshire, Northamptonshire, Bedfordshire, Warwickshire, Lincolnshire, Kent, Sussex, Essex*, and the Marshes in *Middlesex, &c.* in all which Places great Numbers of Cattle are fed ; and by the Management of them in Order, brought sooner to Market, for the Benefit of the Feeder. For if the Land is not strong enough to feed an Ox off without changing, they must be shifted often to fresh Grass : It is a great Advantage to the Feeder to have several Grounds to shift often, which bring Cattle forward very fast ; and in three Weeks or a Month's Time those Grounds will be ready again to receive them ; which does add very much to the fatting of them.

IN

## 48 Of MEADOW, &c.

IN many Places, where Grounds are large, they feed Beast and Sheep together, which is not so well, if possible to be prevented, be the Ground ever so large; for where Sheep feed they will stain the Grass; neither will the Beast eat where they have been to feed and lie on. Therefore, if possible, the Sheep should be kept in a Ground by themselves, or to follow after the Beast, for they feed closer to the Ground than Beast can; for a Bullock or Cow licks in the Grass with his Tongue, which is by Nature provided with a Roughness at the Tip, so that they require a length of Grass for that Purpose; and Grass cannot well be too short for the Sheep, they feeding better on it, and will be sooner fat.

I once was in *Northamptonshire*, near *Clay-Coton*, where their Grounds are pretty large, and 'twas their Custom to feed Beast and Sheep together, as in many other Places: I persuaded the Gentleman to feed his Beast by themselves, and to let his Sheep follow his Beast, as they were shifted into fresh Grounds; and he told me himself, his Beast and Sheep did both grow fatter and sooner, and both Sorts paid better that Year than usual; and I presume never left it off, after he found such Benefit: And many Times the Feeders buy their lean Beast out of the  
Y oak,

Yoak, and are work'd very poor; those Beast, when they are brought to fresh Grass, are apt to surfeit: Now these should be blooded in about ten Days, which makes them thrive the better; also those weak Beast are subject to the Tail-Evil, which is a Worm at the lower End of the fleshy Part of the Tail, which is then hollow, and will not thrive; to remedy this, take his Tail, and spread his Hair at the lower End, then cut of a Joint or two of his Rump, which will draw out the ill Blood; by doing of which, it may be a Means to fill his Points backwards, *viz.* his Cod, Twist, and Flank; and by so doing, it helps all other in those Points, and make them thrive much better.

I was once at a Gentleman's Seat in *Hertfordshire*, in the Month of *April*, and walking with him in his Park among his Deer, I perceived there was much more Grass than his Deer would eat, though but about a hundred Acres. I persuaded him to let his Steward (who was going along with me into *Lincolnshire*) buy him twenty Beast, to feed among the Deer: He gave Orders accordingly, and the Beast came up the Beginning of *May*; and in *January* following (after a little Hay was given to them, the Grass being short) they were sold.

H

in



in *Smithfield*, and paid for keeping above 100*l.* being more than the annual Value of the Land of the Park, and never a Deer fed the less, being about sixty Head of Deer kept in it; for Beast and Deer feed well together, the Beast eating the longer Grass that the Deer will not eat; for being in Nature like Sheep, they commonly feed on the shortest Grass. By which means many Noblemen and Gentlemen may make an Advantage of their Parks that are large, more than at present they do.

Now as Water is so great a Benefit to all Creatures, so 'tis, or ought to be, the Care of all to endeavour to find out this only Thing necessary: And it hath been the Enquiry of many to search for it in Lands that lye high, and the Grounds naturally dry. And among the many Attempts, one is very good, if practicable, as it hath been related in *Yorkshire*, that a barren and dry Ground has been bored many Fathom deep, till they met with what they call a Grand Spring, which they bore through to, and that shall cause a perpetual flowing above Ground, though many Fathoms deep. Now if such a Spring is found in a Ground that hath a Declivity, it may be led to many Grounds, by a Ditch or a Rivulet cut from Ground to Ground, to any Place or Corner  
of

of several Grounds, to supply each with what Quantity they please; and when that shall be full, to divert it to any other by the same Means: If this is practicable, as has been certify'd, no Ground may be in want of Water in any Place; thus Water may always be had, and at no very great Charge, it being related that it cost not above four Guineas, and they bored twenty Fathom, through several kind of Oars: 'Tis conceived that many Noblemen and Gentlemen would willingly gain Water, if at a greater Expence, besides the purchasing of Bores to search for it. This is the quickest Way of any to raise Water; and in those Countries where they bore to find the Ore of Iron, Coals, &c. the Charge will not be great; and where they are not used, if several Gentlemen were to joyn for one, the Charge would be but small, and they would find their Account in it.

As the beforementioned is how to procure Water to dry Lands, it will be as necessary to know how to drain Lands that are too wet, and to carry it off from those Grounds which are too wet, which many are subject to in several Parts: If the Waters lye only on the Surface of the Ground, opening the Ditches round the Ground, and cutting narrow Rills of about a Foot

52      *Of MEADOW, &c.*

wide and deep, will drain that off; the Land will be dry, and become good Ground, if the Water by ill Husbandry has not lain too long; but if the Field is large, and a great deal of Water on the Land, the Ditches must be the deeper to receive the Water; for the Ditches dug on each Side of the Ground may be so order'd, as to keep most Lands dry, (except there are many Springs in the Ground, which must be performed another Way) especially if there is any Current to carry the Water off; and the Earth that is dug out of the Ditches round the Land, when 'tis mellowed by lying a little while, is very good to be spread on the Grass Ground, being fresh Earth, which will revive the Grass Roots exceedingly: 'Tis not so useful on ploughed Lands, because the Plough turns up fresh Earth whenever it is ploughed.

Now those Lands that are spewey, and full of Springs, and are so tender that hardly any Creature can feed on them, are to be cured in this Manner: If the Ground has any Declivity, then open that side of the Ground by a large deep Ditch, according to the Compass the Ground is of that is to be drained, if the Springs are many, it must be the deeper and wider, to about five Foot deep, and about four Foot wide,

as



as the Quantity of Springs are, which must be your Rule; then open Rills in several Parts of the Ground, of about two Foot deep and a Foot wide, and leading cross the Ground into one or more Rills, till they all run into the great Ditch; after that, fill each Rill with Stones, about the Size of Eggs or bigger, up to near the Surface of the Ground; then cover the Top with Turf. These Rills will never choak, and the Water will pass away between the Stones, and make the Surface firm, if you keep the grand Mouth open; so your Work is done for many Years, and your Land will become good. This Work has been done by Bushes, &c. yet this is the most certain, for they decay and rot; but this is always the same, as many have found by Experience, to their great Profit, who have taken Land that has been of no Value, and made it good Ground; and it may happen that many Grounds are spewey together, then let a large Pond or Gutt be made, to drain all by the same Rule: The Pond will supply all the Grounds, if it can possibly be made in the Centre of them, butting on each other.

Now this is not directed to drain large Fenns, that must be done another Way, by large Cuts, like a small River, and Mills.

## C H A P. XIX.

*Of H O P S.*

**H**OPS are become an universal Commodity for the preserving of Beer, though formerly very much decry'd, and are used in almost all Parts where good Drink is brewed, that is intended to be kept long; and not only so, but they bring a great Revenue to the Crown: Therefore the Increase of the Plant will be of great Service, which may be done by pursuing the following Method.

WHEN you dress your Hills in the Spring, put about two Quarts of the Manure in each Hill, mix it very well, that there be no Lumps remaining in the Earth; this will add a Vigour to the Roots of the Hop, and will make them shoot strong Vines, and prevent the Worms or other lurking Enemies that prey on the Roots; and does give the Vine such a Strength, that it will get the Master of a dry Season, by which it may produce a good Crop; when sometimes a weak Vine may be destroy'd by the Extremity of Drought. Then, about the  
Time

Time that the Hops blow, or bell, add about two Quarts of the Manure Liquor to each Hill; do not let the Liquor touch the Vines of the Hops, but pour it at a little Distance, which will feed the Roots; do not put more, for that will be sufficient.

Now as to the planting the Hop of the Suckers or Off-sets, they are to be in *March*, after the Hills, at the proper Distances you like, are made: Your Plants must be eight or ten Inches long, and in each three or four Joints; then dig the Holes, you intend to put the Sets in, about a Foot deep; and the same over, to make the Earth light, to prepare it for the Sett to shoot the better; set two or three Sets in the middle of the Hole, and hold them in your Hand together, while the Earth is put in; let the Tops lye even with the Ground; also let the same End be uppermost, as grew before; then press the Earth well about the Roots, if your Bed is large as some make them, then you may put a Sett at each Corner.

Now when your Ground is full planted, and the Hills made up to the proper Height you design them, and cleared of all Weeds, &c. which may be done either before or after they are poled, according to the Forwardness



wardness or Backwardness of the Spring. At *Farnham*, 'tis said, they make their Hills when they cut and cleanse their Hop Roots from their Suckers; others direct to make them after they are poled, and tied to their Poles, which is to be done when your Hop is grown two Foot high; bind them then with a Rush or long Grass; place your Poles strong in the Ground, to prevent the Wind from raising them, which will endanger your Vines and Roots. Place your Poles outwards; rather than to lean inwards, to prevent their growing or laying hold of the other Vines, which will make too much a Shade, and prevent their Blossoming or Belling, and not Ripening; let your Gardener continually be a paring up the Weeds that grow, and make up the Beds or Hills; and when a dry Time happens, water them; lay the outside of the Hills highest, that the Water and Rain may soak, and run to the Roots of the Hops: When they begin to blow at the latter End of *July*, they bell presently after, and sometimes are beginning to ripen the latter End of *August*: When they turn brownish, either in Seed or Bell, then begin to pluck; or when they smell fragrantly, they are then ripe: Employ as many Hands as you can get, for they will scatter, and then the Wind does them Damage: When you gather  
ther

ther them, prepare a Place in the midst of the Garden, by levelling it, and watering and treading of it like a Floor, to lay them on for Picking: On the Outside of it sit the Pickers, and pick them into a Basket; pick or strip the Hops from your Poles: When the Floor is filled, clear it and sweep it: Some use a Hair-Cloth, or Blanket, on a Frame of short Poles, set on four Stakes, on which lay the Poles with the Hops on them, and pick them into the Blanket, and when 'tis full remove them; which Frame may be removed as you please from Place to Place: This Way saves the stripping the Hops from the Poles; and no broken or scraggy Poles hinder the Picking; neither are any scattered in the stripping, as will be otherwise, and is sooner done: When you draw the Poles, if any grow on two Poles, divide them; and when you cut them, let them be two or three Foot above the Hills, to prevent the Vine of the Hop from bleeding, else 'twill draw the Strength of the Root too much, and so weaken it: Draw no more at a Time then you can pick in an Hour or two, for fear of Rain. If you have a very large Garden, you may provide a Shed, under which you may pick your Hops, which will defend both the Hops and Pickers from the Sun and Storms, if any should happen: Gather no Hops  
I wet,

wet, or the Dew on them; let not your Hops be over-ripe, for then they will shed their Seed, which is the chief Strength of the Hop, and lose their green Colour.

Now as to the Drying of Hops, some use the same Kiln as for Malt, and lay them about a Foot thick, and in about twelve Hours they will be dry enough; they must be dried without Smoak: Some dry them with Charcoal, but others use an Iron Furnace, about two Foot Square, with a close Grate, into which they put in Sea-coal, having a Vent to convey the Smoak; which Iron Furnace, being kept glowing hot, gives Heat enough to dry them; nor doth the Smoak of the Sea-coal annoy the Hops, because 'tis kept in: Others dry their Hops with light dry Wood, and some with Straw, and use the same Care that they may not be annoyed with Smoak. You must not bag them as soon as they come from the Kiln, for then they will crumble to a Powder, but lay them in some Room to toughen again, and then bag them: When bagged, put them into a dry Place, and they will keep several Years.

AFTER all your Work is thus done, when your Hop-Poles are dry, lay them in a dry House till they are wanted again; though



though some set them upright in their Hop Ground, one against another, till such Time as they are wanted; but this decays them sooner.

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## C H A P. XX.

*Of FOREST TREES.**Of the OAK.*

**T**HE Oak being the chiefeſt Tree in the Foreſt, for the Support of the Shipping, may from thence be counted the Bulwark of the Nation; therefore we ought, as much as we can, to encourage the Increate of the ſame, and to preſerve it in every Country, but eſpecially in thoſe near the Sea, or Rivers, for the more eaſy Carriage of it: And though we have had many Acres deſtroyed by the Plough for Tillage, yet then the Owners or Farmers ſhould be obliged to plant or raiſe of each Sort of Timber Trees in the Hedge Rows of large Grounds; which would ſhew they were not for totally deſtroying all Timber Trees, that were planted Ages before their Time; and by which the future Age might ſee, that their

## 60      *Of* FOREST TREES.

Predecessors had some Thoughts of the Security of those that were to come after.

THAT excellent Treatise of Forest Trees in general, written by the Learned *John Evelyn*, Esq; gives a large and full Description of the Benefit and Uses of all and every Sort of Plants for the Forest, &c. but fearing that worthy Author may not fall into every one's Hands to read and to practise his Directions, I shall here presume to give the Reader some of the most material Directions for raising and ordering some of the chiefest Trees that are for Timber; because by the same Rule, most or all may be raised of the other Kinds; not only for the Supply of Husbandry, and Utensils for Trade of many Sorts, but also Materials for Buildings, Ornament, Fuel, &c.

AND first of the Oak, there does appear by the Acorns some Variety of them; but when you intend to plant, choose them from the largest and best Sort, rather when they are fallen than those pluck'd from the Tree, for then Nature hath brought them most to Perfection; and, if possible, let it be at a dry Time; then lay them in some open Room to dry; then keep them in some dry Place till *January*; then having prepared your Land that you design to set  
or

## Of FOREST TREES. 61

or sow them in, if a loomy Land it is best, but every one must content himself with the Land he enjoys: The Lands must be digged and made clean of all Weeds. Then sow them in Rows, or otherways, as you please, about two Inches deep; by the sowing of them at this Time, they may be preserved from Mice or other Vermin; but if 'tis wet when you gather them, they will hardly keep so long, but will shoot out at the small Ends a little Bud; then they must be committed to the Earth sooner, for then the Body of the Acorn will crack, and the Spear prepares to shoot into the Earth, and send forth his Leaves; but if Seed spears forth, before 'tis committed to the Ground, the Spear withereth, and will never grow; and 'tis the same of Nuts, or Stone Fruit; for Nature, once set in Motion, will rather cease to be, than alter its Course; for Nature hates Violence; neither can the Seed receive the precious Sperm, proceeding from its Father and Mother (that is the Sun and Earth) for in the Earth is several Breasts to nourish each Plant.

WHEN the Acorn arises in the Spring, keep them clear of Weeds, and let them remain two or three Years before you transplant them; then transplant them into good fresh Ground, if possible, mixing the  
Earth



## 62      *Of* FOREST TREES.

Earth you transplant into with a little of the Manure : Let none of it lye in Lumps, but let the Ground be well mixed ; cut the Tap Root and the side Boughs, and set them as you do other Trees ; keep your Ground from Weeds, moving it gently, and pruning it yearly, by which you will obtain fair and large Trees : These Trees do not love to be removed after six or seven Years Growth, no more than a Walnut ; nor in fact any other Tree that shoots a deep Tap Root, for then 'tis with Difficulty they recover ; for 'tis the Nature of all Trees to shoot forth one Root first, and then some side Roots, according to the Nature of the Ground 'tis sown or planted in : And this most stately Tree does commonly run to the Bottom of the Soil, especially in a loose Ground ; and at the End of the Tap Root it puts forth feeding Roots, and it comes to grow pretty large, it having but few Roots above. This Tree can hardly bear removing, by reason of losing his best Support, by dismembering these Roots upon his Removal, or most of them.

Now when a Tree is removed at one, two or three Years old, then there is but a small Head, so that it requires the lesser Root towards its Maintenance ; then this Root lying not deep, and in a little Com-  
pass

## Of FOREST TREES. 63

pass of Ground, may be taken up with less Loss, to the Proportion of its Head.

*Note.* WHEN you take up any of these Trees, in cutting any of the Tap Roots, and the End of the greatest of the other Roots, with a Slope lowermost, then there will at the End of the Cuttings, at that Place, put forth other small Roots, which being nearer the Body of the Tree, will be the easier removed, if any Occasion should happen to remove it again.

Now as to the removing of Trees, tending somewhat to their Growth, as often in Fruit Trees, &c. then make your Holes pretty deep and wide; and if your Ground they are removed to is not very good, then prepare the Ground with some better Mould, such if you can as the Tree best likes; this will encourage the Growth of the Tree, and save you a great deal of Trouble, and give you Delight, to see your Plantation thrive, and may save you, after three or four Years, a replanting again, by taking a little Care at first: The Clay Grounds produce large Oaks; yet they are slower of growing, but more holding than any other.

WHEN you remove your larger Trees, 'tis proper to open the Ground well round  
your

## 64 *Of* FOREST TREES.

your Tree at a Distance, to prevent cutting too much of the Roots when you take them up, and with it as much Earth as is possible (if not too far to carry.) 'twill put the Tree in less Danger; such Roots as you find bruised, or much cracked, cut them off, till you come to a firm Part; such Trees as are of slow Growth, as the Oak, &c. you may prune up to a small Head; and if your Tree be taper and strait, you may prune such a Tree to one Shoot; but if not taper, then leave two side Boughs or more, to receive some of the Sap, which will make the Shoot you intend to lead to make the Body of the Tree the smaller, and so your Tree will be taper; but top all your Shoots but the leading Shoot, which will make the Body of the Tree swell the more, and hinder them from prejudicing the Leader: If you leave any Shoots, do not leave them right against each other, for that will make the Tree too thick in that Part, but leave them one above the other, which will make the Tree grow more taper; else you may spoil the Height of your Timber, or your Tree may grow top-heavy, and so grow crooked: (*This is of Timber Trees*) Thus by taking Care of leading your Trees at the first, and keeping them clear of all Suckers, especially the first two or three Years, you need not fear  
having



## Of FOREST TREES. 65

having fine tall Timber Trees of every Kind: If the Head grows too big for the Body, then you may leave some side Boughs to receive some Sap, to make the Tree taper; though seldom in Oaks at the first growth.

### *Of the E L M.*

'TIS said there are several Sorts of this Tree; but two Sorts are most cultivated here, the Mountain Elm, being of a smaller jagged Leaf, and that called the *French*, whose Leaves are thicker, more florid and smooth, delighting in a lower and moister Ground, this last Sort is best known here; and some of them have risen to a great Height, as well as large Compass. The Ground that this Tree likes best is a light brick or loomy Earth; 'tis easily raised from the Roots of the Mother Plant; and the more you take from the Roots that shoot up, they seem the more to encrease; though many think this Tree bears no Seed, yet 'tis affirmed by the curious and nice Observers of Nature that it does: For about the Beginning of *March* you will find the broad Leaf beginning to fall, which has the Seed in them; and if these be gather'd in a dry Day, in what Quantity you please to sow, then lay them thin in some Place to dry for four or five Days;

K

and

## 66      Of FOREST TREES.

and having prepared a Bed according to the Quantity of Seed you intend to sow, let your Bed be made of fresh brick Earth; if possible sow the Seed and Vessel all over; after sift some of the same Mould all over the Bed, for they will not rake, let them be cover'd about half an Inch thick, then scatter the Manure thinly over the Bed; if the Summer proves dry, water them sometimes, and keep them clean of Weeds, and about the middle of *August* they will come up; and when up, sift a little more Mould all over the Bed, but not so much as quite to cover them: This done, the next Summer prune them of their side Boughs, though young; and when they have stood two Years, you may remove them, still pruning them yearly, and preventing Cattle from cropping of them, you'll then produce many tall fine Trees: This Way is allowed to be the best for raising the best Trees, tho' the other Way is the quickest and most commonly done. The scattering some of the Manure over the Bed very thinly, when the Seed is sown, will make them flourish greatly; as also when you remove them, mix a little of the Manure with the Ground you transplant them to, and let none lye in Lumps, which will greatly add to their Growth: You may plant this Tree in the Hedge Rows, it will run in the Bank, and  
add

## Of FOREST TREES. 67

add to the thickening your Hedge with Wood, and agrees well with any other Wood that grows near it; 'tis counted erroneous to think it will grow from the Chippings: In Lopping these Trees, cut always close to the Stock, and cut sloping upward, the better to shoot off the wet: It will grow off Layers, by laying them along the Hedge Rows, and covering them a little with the Mould; they will shoot and fill an Hedge soon, if cut of each Side before 'tis laid in the Ground, and about an Ell long: The Season for this Work is about the End of *January*. After they are grown up, then you may saw or cut them asunder, and plant them twenty or thirty Foot asunder in your Hedge Rows as you please. There are many other Ways of increasing this Plant, as well from the Branches as Roots, by opening a Trench in the Hedge Rows, and the Roots will shoot out, &c. This Tree is the easiest of any removed when large; but then he must be lopp'd of his Branches, leaving only the Top intire, and taken up with as much Earth as possible.

### *Of the A S H.*

THE Keys, or Seeds, that you sow to raise this Tree, must be thorough ripe, which will be about *October* and *November*:

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When



## 68      *Of* FOREST TREES.

When they are gathered, lay them then to dry; let them be gathered from the tallest and straightest Trees, by reason the Seed will be larger and better: Let the Time of Sowing be from *October* till *January*, for they lye a Year before they spring, covering them about an Inch, or Inch and half, with fine Mould, and scatter some of the Manure thinly over the Bed: When they are up, keep them clean of Weeds at first, for they shoot but little the first Year, but the second they will shoot strongly; the Winter after they may be transplanted; prune the little side Shoots, and cut the Tap Root, keep them with digging and pruning at the first, and they will soon come to be fine growing tall Trees: When you remove the Ash do not top him, except he is top-heavy; for the Ash, like the Walnut, is not to be headed, they having a great Pith; the side Boughs may be cut, but then close to the Body, and the Boughs not large; though 'tis not like the Elm, to run much into side Branches; by doing of which, your Ashes will grow to large and tall Trees soon. 'Tis not fit to be planted near a fine Garden, for the Leaves turns to Soil, and spoils the Walks, and the Roots, running so shallow, will spread into the Beds and Borders: They are as bad for the Plough Ground, for the Roots will draw

## Of FOREST TREES. 69

draw the Ground, so as to spoil the Corn : But though the Ash does prejudice Corn by its Root, yet the Wood is the usefullest and most universal of all Wood, except the Oak, for the Plough, and many other Uses of the Ploughman : It is a quick growing Wood, and does grow in most Sorts of Soil, provided not too wet ; it thrives best on such Grounds as have the Surface of a loose Nature, so it be not too shallow, and is excellent Timber for several Uses.

ASHES may be propagated from a Bough split off, with a little of the old Wood, and from the old Root, which will shoot forth prodigiously ; from whence comes that called the Ground Ash, so much desired for Arbors, Espaliers, and other Pole Works. The Uses of Ash are many ; as for the Carpenter, Wheelwright, Cartwright, Ploughs, Axle-trees, Wheel-rings, Harrows, Oars, and the best Blocks for Pullies ; also for the Cooper, Turner, and Thatcher ; Palisades, Hedges, Hop Yards, Poles, Spars, Handle Stocks for Tools, Spade Trees, &c. Ladders and other Tackling.

## Of the BEACH.

ABOUT *September* the Mast of the Beach fall much, then gather what Quantity you like :

## 70      Of FOREST TREES.

like : As soon as your Seeds are dry, make a Couch of Sand, by putting a Layer of Sand first, then cover that with Mast, then Sand over that, and so on, *Stratum super Stratum*, till you have covered all your Mast: Having thus prepared your Bed with Sand in a dry House, any Time in Winter, let your Sand be pretty moist, and so keep it till *January*; then prepare your Ground by often digging, and a light gravelly Ground; or if you incline to sow it in your Woods, that is the best Time: It will thrive on most Grounds, and grow to large Trees, even on the Mountains; for they will seemingly strike their Roots into Places that are almost impenetrable.

THE Beach serves for various Uses of the Family; the Turner makes Dishes, Trays, Rims for Buckets; likewise for the Wheeler, Joyner, Upholsterer, as Chairs, Stools, Bedsteads, &c. for the Bellows-Maker and Husbandman, Shovels and Spade Graffs; and Floats for Fishing Nets of its Bark; also Billets, Bavins, &c. and 'tis said the burnt Ashes of the Beach, with proper Mixture, is excellent to make Glass with.

Of



## Of FOREST TREES. 71

### *Of the* CHESNUT.

THERE are several Sorts of this Nut, and though the largest and best comes from abroad ; yet there are many raised in this Country, and the best Sort grow to large Trees, and bear a good Nut ; and was formerly planted in several Places, as did appear by the many Buildings in and about the City of *London*, before the great and dreadful Fire consumed the same : For in several Places, in the Out-Parts, are some Buildings now standing, which has been built above an hundred Years, and the principal Part of the Wood-work is of Chesnut. Therefore as this Timber is so durable, and of speedy Growth, 'tis great Pity it is not more minded by Gentlemen in planting of their Woods and Hedge Rows : It will grow as Underwood ; and being lopped, will increase from their Roots very much, and will produce great Number of the best Stakes and Poles for Palisades, Pediments, and Props for Vines and Hops : The Timber is good for Columns, Tables, Chests, Chairs, Stools, Bedsteads, Tubs and Wine Casks : They are produced by sowing. Let the Nut be first spread to sweat, as you do the Beach Mast, in a Layer of dry Sand, *Stratum super Stratum* ; then put them in a  
Lixivium

## 52 Of FOREST TREES.

Lixivium of the Manure, all that swims are not valuable; then take them out, and dry them for about a Month; then after that sand them again; then dry them till about the Beginning of the Spring; then set them in Rows as you do Beans; put them into the Holes with the Point upwards, and do not remove them for two Years; yet they may be planted, where you design they should stand, and not removed at all; if you do remove them, let it be about *November*, and that in a light Ground, or a moist Gravel; though they will grow in almost any Soil you have, even in a Clay; in any Place, either on Hills or Declivities of Hills; if Northward they will thrive, keeping them clear of Weeds at the first Planting; and prune them as you do the Oak. The Fruit of this Tree has been, and is a very great Dainty in many curious Dishes, both abroad as well as here; they are made into Bread in some Places: In some Countries abroad they put the Leaves into the Mattresses they lie on.

### *Of the* WALNUT.

THERE are several Sorts of this Nut; therefore they who design to plant, must choose the Sort that is most esteemed; (and to know what Kind will alter for the better)  
some

## Of FOREST TREES. 73

some will be better, others worse, and some near the Sort you design to raise from : gather your Nuts from a young thriving Tree, that is in the Prime of its bearing : When they are gathered, lay them in some Room to dry, turning of them sometimes with a Broom : About the Beginning of *October* put them into Sand, a little moistned with the Lixivium of the Manure, till about *Christmas*, for then they'll begin to spear ; sow them not in their Husks, neither steep them, (as some advise ;) set or sow them in *January*, or the Beginning of *February* ; 'tis good to strew some Furzes broken, or chopt small, to preserve it from Mice and Rats, when the Shell begins to be tender. If you plant the Nuts, where you design them to abide, is well, because this Tree is most impatient of any to be removed : You must keep them digging about, or houghing and pruning, till they get about six Foot high ; if you bud them, it may make them bear the sooner : I have raised them from the Nut, and in seven Years they have bore, and grown larger in that Time from the Nut, then some replanted, that were twenty Years from their first Growth : They delight in a sandy rich Ground, especially inclinable to a feeding, chalky, or marle, and where it may be protected from the North-Wind, (though it

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affects



## 74 Of FOREST TREES.

affects Cold rather than extreme Heat ) It may be set in Woods, for it will run up (if the under Boughs be cut off, to a great Height, and yield very good Timber for many Uses : It yields a very good Oil for Painters, and other Uses.

### *Of the FIRR, PINE, and PINASTER.*

THESE are noble Plants, and grow very lofty ; there are two Sorts of the Firr, one called the Male, and the other the Female ; the Male is the bigger Tree, most beautiful and tapering, and of a harder Wood ; the Female is much the softer and whiter : In *New England* they have many of them, which are preferable to any other : In the *Scottish Highlands* are some of these Trees of a great Altitude, though not altogether so tall, thick and fine as those in *New England*) and grow in Places inaccessible. The Reason they do not thrive in common with us here is, 'tis thought, because we plant them from *November* to *March* ; but the best Time to remove these is from *March* till the middle of *August*, which is also the best Time for most of these Sort of Plants : The Ground they love is a fresh gravelly Soil, mixed with Loom, though they'll grow in a stiff hungry Clay ; they do not love a rich Soil ; they must not be set too deep ;  
they

## Of FOREST TREES. 75

they will grow on the Top of Rocks, and to large Trees, in the cold Countries of *Norway, Denmark, Russia, &c.* The Cones, or Clogs of these Trees, when taken from the Tree, are either laid before the Fire, or in warm Water, to make them open, so as to cast forth their Seed; they are to be sown in Beds or Cases; sow them in a shallow Rill, not above half an Inch deep, and cover them with fine light Mould; cover the Bed with some Furze, cut small, to secure the Seed at its first coming up, else the Birds will pull it out of the Ground and devour it: Being risen a Finger height, sift some light Earth, mixed with a little of the Manure, which will make the Root shoot fresh, and support the young Shoot, which may be top-heavy, and swagg: When they are of two or three Years growth, you may remove them where you please; but remember to take as much of the Earth as you can along with the Plant: Therefore they should be sown at a proper Distance, that you may the better come with your Spade, or other Tool, made hollow, to take up the Plant; as you do with a hollow Trowel, in the removing of Melons, Cucumbers, &c. The best Time to transplant is in *April, &c.* as was beforementioned.

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THE Pine have many Sorts; they should be gathered in *June*, though they will hang two Years on the Tree; there will be some ripe and some green on the same Tree; you may preserve them in Sand, till you set or sow them in Ground like the Firr. This Seed may be set a little deeper than the Firr; and the Seed of this, as well as the Seed of all of this Kind, may be mix'd at the Time of Sowing with some of the Manure, and 'twill cause it to come up stronger and sooner; they may appear in *May*; when you prune them, cut them close to the Stock, as are other Trees are, if you like to have them tall and spiry; but then rub were you cut with the Dust of Cow-dung, to prevent the bleeding or coming forth of the Gum, which must not be neglected. These Trees grow well in Mountains; and 'tis great Pity that this Tree were not try'd in many Places on the Hills in *Wales*, that at this Day bear nothing, but lie uncultivated.

THE Pinafter is best for Walks, because it grows tall, and maintain its Branches on its Sides: The Firr, upon his Removal for the first five or six Years, will seem to be at a stand as to its Growth; but when it hath fix'd its Roots, and finds the Ground  
to



## *Of* FOREST TREES. 77

to its Liking, will shoot marvelously, and to great Satisfaction.

### *Of the* LINE or LIME TREE.

THERE are two Sorts of this Tree, one having a broader Leaf than the other (by which chiefly they are distinguished) of which we have had the broad Leaf from *Holland*; though they may and are raised here from the Seed, as in many Gentlemens and Gardeners Nurseries, and in Woods: The narrow Leafed is more difficult to be removed than the broad; they are by some called Male and Female, yet both bear Seed by laying of them in the Earth; they will grow as the Elm, but from the Seed they grow to make finer and straiter Trees, and sooner come to Perfection; the Seed is ripe in *October*; then lay it in some dry Place for a Week or more; then put it in a Couch of Sand 'till *February*; then sow it in some loomy Ground; after sown, strew some of the Manure very thin over the Bed; if a dry Time follows, moisten them a little; keep them clean from Weeds before you remove them; let them remain two Summers, and then if you remove them to any Place, they will thrive extremely, and serve for many Uses.

*Of*

## 78      *Of* FOREST TREES.

### *Of the SYCOMORE.*

THIS Tree is not so much planted near Gardens as usual, by reason its Leaves falling upon the Walks create a Soil, which breeding Weed and Grass, &c. spoil them; though it produces a fine Shade near Dwelling Houses; but are by many refused, having a Quality to draw Flies and Moths, and does receive the Honey Dew, as well as the Oak, Maple, &c. They are easily raised from Seed; for when the Keys are ripe, they scatter and grow wherever they fall; though they are by some, that intend to sow them in the Wood, managed as the Ash; they are speedy of Growth, and serve for Walks, &c.

### *Of the BIRCH.*

THIS Tree is increased from the Roots or Suckers, and will thrive in most Grounds whether high or low: And though it may by some be called the worst of Wood, yet for its many and various Uses it ought to be cultivated in the Woods, &c. When this Plant is grown to a large Size, 'tis often what they call tapped for its sovereign Juice, which flows from it upon the first Motion of the Sap; and is managed in the following

Of FOREST TREES. 79

ing Manner, as is set forth by that excellent Author *John Evelyn*, Esq;

“ ABOUT the Beginning of *March*, with  
“ a Chizzel and Mallet cut a Slit, almost  
“ as deep as the Pith, under some Bough  
“ or Branch, of a well spreading Birch;  
“ cut it oblique, and not long-ways, in-  
“ serting a small Stone or a Chip to keep  
“ the Lips of the Wound a little open;  
“ fasten thereto a Bottle, or some other  
“ convenient Vessel appendant; out of this  
“ Apperture will extil a limpid and clear  
“ Water, retaining an obscure Smack both  
“ of the Taste and Odour of the Tree;  
“ thus may you obtain this Water: I will  
“ present you a Receipt how to make it.

“ To every Gallon of Birch Water put  
“ a Quart of Honey, well stilled together;  
“ then boil it almost an Hour with a few  
“ Cloves, and a little Lemon Peel, keep-  
“ ing it well scumm'd; when it is suffi-  
“ ciently boiled, and become cold, add to  
“ it three or four Spoonfuls of good Ale to  
“ make it work, which it will do like new  
“ Ale; and when the Yeast begins to set-  
“ tle, bottle it up as you do any other  
“ winery Liquors, it will in a competent  
“ Time become a most brisk and spirituous  
“ Drink; which is a very powerful Opener.  
“ This



## 80      *Of* FOREST TREES:

“ This Wine may (if you please) be made  
 “ as successfully with Sugar instead of Ho-  
 “ ney; one Pound to each Gallon of the  
 “ Water. Or you may dulcify it with  
 “ Raisins, to compose a Raisin Wine  
 “ of it. ”

### *Of the* HASEL.

OF this Kind there are many Sorts, as the Filberds both red and white, and the *Spanish* Nut; as also what is called with us the large Cob-Nut; they are easily raised here, which you may sow like Mast in a Furrow, about six Inches deep. Scatter some of the Manure on the Furrow, after it is cover'd, which will make them strike a strong Root, and increase very much: Let this Work be done the latter End of *February*, for then the Frosts are past, which affect this Nut, as well as the Mice, who are also great Devourers of the Kernel, if they can come at it: When they grow up they are very tonfile, and may be cut into Hedges, or made a Shade for Walks, &c. The Wood serves for many Uses; and the Fruit, when ripe, is searched after both by Men and Maids in every Country.

## Of FOREST TREES. 81

### *Of the MAPLE.*

THERE is Plenty of this Tree in most Parts of the Kingdom, both in Hedges and Woods: It is increased both by Seeds and Layers, and from the Roots of Trees cut down; the Seeds lye in the Ground a Year, and may be ordered as before in the Ash; it is not good to let it grow to too great a Tree in the Hedge, for 'tis said it will kill all the Wood that grows under it; it is a good Wood to plant, as for Underwood in Coppices, because it shoots forth good Shoots, and thickens a Wood much; it thrives best on a dry Ground: The Wood is used for many Utenfils, &c.

### *Of the MULBERRY.*

THOUGH this Tree is not counted a Forest Tree with us, yet Abroad 'tis planted in Woods: And in King *James* the First's Reign, he published his Letters, &c. to recommend the Planting it in every Part of the Kingdom, for the Benefit of his Subjects in general, on Account of the Silk-Worms. There are two Sorts of them, the black, and white: This Tree is easily raised from the Seed; for if any of the Mulberry is given to Hogs or Fowls, nay  
M even

## 82      *Of* FOREST TREES.

even if the Dogs eat them, from the Dung of each will the Mulberry be produced : So also many of the Seeds of Ever-greens may be raised, as Holly, &c. that lye long in the Ground, by feeding or letting the Fowls, &c. eat the Seeds, which gives them a quicker Change to Vegetation, than lying in the Ground only ; except the Ground happens to be prepared, or proceed from some rich Soil that causes Vegetation through the Warmth or Richness of it by some Cause as is aforesaid. When they first appear above Ground, moisten them a little, for the Sun's Heat will over-power them, and dry them up. Keep them clear of Weeds till they have got a-head to preserve themselves : When they are about five Years old transplant them ; keep them pruned at the first of side Boughs till you transplant ; they may be raised of Layers from the Succours in the Spring, and also grafted in the Spring : As the Fruit and Leaves are beneficial for many Uses, as well for Food, Physick, &c. so likewise is the Wood useful, and will lye in the Water as well and as long as the Oak : It is to be wished that this Tree was more propagated, if it were only for the Sake of the Silk-worms, which, as some Authors relate are done in *France* and *Italy*, the Climate in those Parts being as uncertain in the Seasons, for  
the



## Of FOREST TREES. 83

the Produce of these Insects, as Ours : Where the Seeds are sown, scatter some of the Manure thinly over them, which will make them flourish much.

THERE are many other Trees that may be mention'd, as to the raising for Under-wood, &c. but being unwilling to swell this Tract to too large a Price, I have only treated of the chiefest; there being very few but know how to plant or raise most or all from the Seed, in the like Cases, as has been before recited: And as there are some Plants that delight in watery Places, and are by Nature Aquaticks; such as the Alder, the three Sorts of Withes, *viz.* Sally, Ozier and Willow; also the Poplar loves a moist Ground, but not so much as the Alder or Willow, &c. These Sorts most Countrymen know how to plant, as well as other Plants not here mention'd in particular; *viz.* the Horn-beam, Service-tree, Yew-tree, Crab-tree, &c. which are planted as Under-wood in many Places; and others that are planted in the Hedge Rows, for the Boundaries of Ground as well as Fences for Cattle: And as the Observation of the Planter of any of these and the other Plants, should be taken by his seeing what Ground he takes them from, and by observing the Ground each Plant thrives

## 84 *Of* FOREST TREES.

best in, so to plant each Sort, as near as can be, in the like Nature, whether in dry Places, clayey, or watery ; by following this Rule, no Person can well miss, upon his transplanting, on having his Labour successful.

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### C H A P. XXI.

## *Of* FRUIT TREES.

**T**HERE is great Variety of Fruit Trees of the several Species, and under many Denominations in each Sort ; and all, or most of them, have been from Time to Time raised from Seed, and after it hath grown to a bearing Tree, it shews its Produce ; if good, some of the Branches are cut, at the proper Season, to graft where the Fruit of the Tree is not so well liked : And the same also at the proper Season for the Inoculation of one Fruit on the Body of another Tree. Now after this is done by the laborious Gardener in his Nursery, then are they transplanted from the Nursery to some proper Place, where they will grow, and produce good Fruit. When they are removed from one Ground to another, Care must be taken not to break the Roots of such Trees but as little as possible ; neither

## Of FOREST TREES. 85

ther let the small Fibres, that the Tree hath shot the Year 'tis taken up, dry too much, for from thence is the main Hopes of the Tree's Life; they drawing the Moisture of the Earth, more than the dryer or larger Roots, though many Gardeners cut these off too often, which puts the Tree to a very great Struggle to recover; especially if not watered or rained on by the Heavens; for 'till the Tree emits those small thready Fibres from the old Roots, it will not thrive, for by these Vessels the whole Body is preserved; do not set them too deep, in wet or heavy Lands, for the great Moisture chills the Roots that they cannot thrive; neither should they be planted too high in dry Ground, for then the Sun, Wind, and dry Weather have too great a Power on the Root, before it recovers Strength enough to shoot into the Ground for its own Defence; let all broken Roots be cut off before they are planted, and also crop a little of the present Year's Shoot or Fibres, but not too much, if you value the Tree: Let this be done from *September* till *March*; if so late as *March*, then more Care ought to be taken, if Drought comes, by watering, else for want of that Nourishment it will languish and die; put likewise some Fern, Weeds, or wet Straw about the Tree, which will keep it moist, and prevent the Sun or Wind



## 86      *Of FRUIT TREES.*

Wind from drying the Ground too much ; and if the Tree seems to live, yet not to thrive, which is called Bark-bound, you may with a Knife draw the Point from the Fork of the Tree to the budding or grafting Part, by flitting the Bark of the Tree, which will soon shew you the Benefit it receives from that Operation : It may be done in three or four Places round the Body.

Now after the Tree is set, and taken Root, and likes the Ground, 'tis then the Gardener's Part, as a Schoolmaster, to direct and form his Branches ; for 'tis in Trees, like a Youth, if he meets with a good Master, he walks steady the Remainder of his Days ; but if not, the contrary. So in Trees, be they against a Wall or Standards, any Person of Knowledge may see, as soon as he enters the Garden, if the Master Gardener has done his Work justly. For this is one of the chiefest Parts or Art of the Gardener, and there are but few that are Masters of it ; for if a Gardener does not truly know it, he does many Times that in a Day, that Years can't recover ; and sometimes never : So that many Gentlemen plant, and, for want of a skilful Manager at the first, their planting is in vain. Now a Wall Tree should be directed to spread against the Wall, or Pail, as a Fan, that its  
Branches

## Of FRUIT TREES. 87

Branches, like the Sticks of that, may spread from the Bottom to the Top with bearing Branches, which will recompence the Master's Charge; else Time, Money and Labour are all lost. Now 'tis very easy to know the Fruit Buds from the Water Shoots, which may be shew'd to the Unskilfullest in a very little Time, by walking round the Garden, and observing the Director. These Water Shoots, or Branches, should be cut off the Tree, to let the bearing Branches have the more Sap to feed his Fruit, except when a Part is naked against a Wall, then leave one or more of these Branches to fill the void Place, which will make the Tree uniform the next Year.

THIS Part of Pruning is most properly obtained by Practice and Observation; for the Direction by Writing will not be perfect; though that laborious Author *Monf. St. Quintin* hath done much towards it, as well as others. As for the Standard Trees, they are to be pruned likewise, from the many uselefs Shoots, which only fill the Head of the Tree, and robs the Fruit of the proper Nourishment it should have for its Support: These Shoots come every Year; therefore when your Tree have got a sufficient Head, they ought always to be pruned off; your Tree will bear better Fruit, and  
ripen

## 88      *Of* FRUIT TREES.

ripen sooner; while these Shoots hinder the Sun's giving its genial Warmth to bring the Fruit to its Maturity.

Now if your Trees are, for want of a diligent Hand, grown over with Moss, you may, with a Horn or wooden Knife, (for Iron or Steel may wound the Branches or Bark) rub off the Moss from the Body and Branches of the Tree; and, after the first Shower of Rain, take a Hair Cloth, or a very coarse Linen Cloth, and rub the Body and Branches of the Tree, by which you'll clear all the Moss from the Tree, and will give the Sap free Liberty to perspire, which before was choaked or bound by the Moss, and the Tree will recover, and bear again good Fruit: Many Times whole Orchards have been thus spoil'd by Neglect, and many a Tree cut down, which, if a little Care had been taken, might have recovered, and produced as good Fruit as before: For 'tis Pity that Trees should be cut down, after being planted twenty or thirty Years or more, nay sometimes whole Orchards, when by a little Labour they may be made to bear Fruit again, by only having a good Hand to lop or cut off the Branches near the Fork of the Tree, leaving only one Branch to draw the Sap, so that in about two or three Years they'll have a fine Head again, and



and full of Fruit, if the Seasons do not prevent it; which, if cut down, might not have happen'd in the Life-time of the Person who cut it down.

Now one Observation ought always to be made in pruning, be it either with Knife or Chizzel; let the upper Part of the Branch cover the lower Part in a Slope, which will prevent the Wet from hurting or rotting the End, as sometimes it does in large Arms, and many Times endangers a whole Tree by rotting the Body.

Now as to the managing new-set Trees with the Manure: When you dig your Hole to plant your Tree, if the Tree is pretty large, then mix about two Quarts of the Manure among the Earth, stirring it very well that none may lie in Lumps; or screen it, that it may mix well; but if your Tree is small, then one Quart will do; let none touch the Root, but first put a little Mould not mixed about the bare Root, that the Manure may soak gradually to the Root from the Moisture it receives from the Earth by Rain, or otherwise, in the watering the Tree; but those Trees that are already planted, and you have a Mind to refresh the Roots of, put about two Quarts round the Roots of them at a little Distance from

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the

90      *Of* FRUIT TREES.

the Body, first moving the Surface of the Earth to give the Manure a quicker Passage into the Earth, and so dissolving of the Manure by the Rains, Dews, &c. which fall. Do this twice a Year; first at the Spring, when the Trees are in the Blossom; the same about *Midsummer*, when the Fruit begins to be large; the first will invigorate and strengthen the Sap for the Service of the Blossom, the second will add the same to the Fruit, to bring it to Perfection. But if you do not put the Manure itself, the like Quantity of the Lixivium to each Tree will answer the same End; do it no more than twice a Year; for too much either of the Manure mix'd with the Earth at the first setting, or to the Trees when planted, or too much of the Lixivium, or Manure Liquor, is prejudicial; for 'tis of the same Quality with spirituous Liquors, when applied to human Bodies, a little revives them, but too much destroys.

As for the Planting, remember to give them Space enough to spread their Heads, that the Sun may come to give his warm and genial Heat to improve the Fruit, as well as the Air, for both serve to bring the Fruit to Maturity: Also at the first planting secure your Trees, by some Stake or otherwise, from being shaken by Wind,  
or

## Of FRUIT TREES. 91

or disturbed by Cattle, &c. for that obstructs the Root from taking a fast hold of the Earth for its Support; by which Means many are lost, or wither away for want of due Nourishment.

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### CHAP. XXII.

#### *Of the VINES.*

THEY require a light sandy Ground to be planted in; if 'tis a little stony it will thrive in it, if lying to the South, or South-East; and if the Bottom is chalky or gravelly under the Surface, where no Springs are. It cannot be well too hot or dry, if 'tis not addicted to Heath; but if Brambles, 'tis a good Sign, and to be preferred to any other, for they are near a-kin to the Vine: Where that Shrub grows, such a Ground is the most proper for a Vineyard; and the Declivity of a Hill still better; though very much neglected in this Country of late Years; but we have many Places bear the Name to this Day, where they have been planted: Therefore Gentlemen should not be deter'd, because they have not been cultivated as formerly, upon the Account that our Soil and Climate not

N 2

being



being proper for the Plant; (though the more northern Climates, as some Parts of *Germany* and *Hungary*, produce good Wine, as the *Tockay* Wines, &c.) If your Land is too rich, it only permits the Roots to shoot out the Branches and Leaves, but less Fruit; the barren does not admit the Roots to be so luxuriant, neither do they enter the Earth so deep, by which means they spread more towards the Surface, and so gives the tender fibrous Roots the Benefit of receiving the natural sweet and gentle Showers, Dews, &c. which imparts a Pregnancy to this Plant, and do receive the cherishing Warmth of the Sun, and is more impregnated with the volatile Salts, which is drunk by the delicate Pores and Apertures of the latent Roots, whilst those buried deeper are deprived of that Benefit, and grow only fertile in watery and insipid Leaves without Fruit, and produces long and unbearing Branches, whose Joints admit of no Produce; whereas the other will produce fruitful Joints, being very short like to the Joint of a Man's Finger, which are the bearing Branches. Now when you plant your Vineyard, let it be East and West, that the Dews may be off soon in the Morning, and receive the Dews last at Night; for the other Position, North and South, is not so good; When you have provided your  
Ground,

Ground, having these Properties, then you are to get the best Sorts of Setts for your Plantation as will come early, and be the soonest ripe in our Climate.

THERE is a worthy Gentleman near the *Bath*, who has a Plantation of about seven Acres planted with the *Burgundy*, *Champagne* and *Frontiniack*: He told me, that in the Year 1736, he made no less than eighty Hogsheds of good Wine: Also there is a Vineyard in *Rotherbith* which makes a large Quantity; and another near *Croydon*, both in *Surry*, of near twenty Acres, planted by a curious Gentleman; and there are several others within a few Years have been planted, to the great Profit of the Owners, had they disposed of their Wines when pressed. Now when you plant, dig your Trench near a Foot deep, and about a Yard asunder, for the more Ease of going between them to do the necessary Work that is required in the several Seasons of the Year: Lay your Trenches of an equal Size and Height; then set your Plants, let them be about a Cubit long, having three or four Eyes of the young Wood on them; you must have them of the Parsley kind, the early black Grape, and the small Muscadel, which grow here; then plant them in the Bottom of the Trench, a little sloping; when done,  
cover

cover them three or four Inches with the Mould; then level your Ridges, that your Setts may just appear above the Surface; then proceed to plant your Setts something more than two Foot from each other; after this strew some of the Manure along the Ridges, not too thick, which will preserve them: In the Winter Season keep them weeded and houghed; when they begin to shoot, then set your Props, of what Wood you please, either of Hazle, Ash, &c. of about four Foot in length, and the Thickness of a common Broomstick, placed on the North-side of the Plant; if any Suckers rise from the Roots of your Plant, cut them off, leaving only those that grow from the Stem; do this in *May*, and in *June* you will discover what Branches are to be left for the next Year; then tie them to your Prop; at which Time prune, break or crop the Branches, but not cut them, because the Wounds with a Knife, &c. are not so apt to heal; do it in the Heat of the Day, for then the Sun will stop the bleeding where you break or pluck off; thus do till the third or fourth Year from your first planting, for 'till then you will have but little Fruit: When your Plants come to bear a Quantity of Fruit, as you may then expect, then you may leave three or four Shoots to each Plant, with about four Eyes;



Eyes; but when older, you may leave six or more from a strong Root.

IN the latter End of *December*, or *January*, prune your Vines, and keep them always no higher than your Props; prune off all the small Shoots, that you think not able to bear good Fruit, which you may see not only by the Branch but Eye; tie your Master-branch with a tender Ozier about a Foot from the Earth, and bend the Top of your Vine to the next Prop, about two Foot from the Ground, that your Ranks may appear in form, or like an Arch; you must remember to tie your Shoots from the Eyes left last Year, for the new Shoots won't bend; a little Matter breaks them, so you destroy all the Fruit they bring forth, for they often break at the Joint: When you see the Fruit set, and are as big as a Shot, then crop off the Top of your Shoot, leaving only two Joints above the Bunch; always preserving the strongest Shoots for the next Year: This must be done in *June*, or the latter End of *May*, if the Season prove kind for Growth; now prune off all the Water Shoots. Then in *August*, when your Fruit begins to ripen, you must break off such Shoots as are grown too thick since your last pruning in *June* or latter End of *May*. Remember not to leave your Fruit bare; but let it be a little shaded

shaded from the Heat of the Sun by Day, as well as the Dews by Night, which at this Season fall much: Now you are to remember, when you prune in *January*, to cut off the old Wood close to the Ground, and to supply the Place with the best of your young Wood, which was left four Foot high, and must be order'd as before.

Now when your Vineyards want Amendment, as all Lands will, from whatever is planted in them, strew some of the Manure on the Ridges, and about the Ground, between the Rows of your Props, in the Month of *November*, by which means they'll have the whole Winter for the Manure to meliorate the Earth, and will add a fresh Vigour to the Roots of your Vine, and thereby prevent the Frost from piercing too severely the Roots. Use no more than sixteen Bushels of the Manure to an Acre in your Vineyard, as is beforementioned in Corn, &c.

Now as to Vines planted against a Wall, Pail, or House, you may keep them to what Height you please, as the Place will permit: As to the pruning Part, it is to be performed as directed before; but when pruned, cut them in the middle of the Joint; which must be done in *January*,  
*June*,

## Of the VINES. 97

*June*, and *August*. One of the best Artists I knew for cutting or pruning the Vine, was Mr. *Whitmill* at *Hoxton*, near Sir George *Whitmore's*, in the County of *Middlesex*, whose Walls round his Garden, and about his House, were the fullest of Fruit from his Vines I ever saw: And his Observations on Vegetation in general were good and just.

Now when your Vine, that is already planted against your Walls, House, &c. want Refreshment, you may water them with about two Quarts of the Lixivium of the Manure, which will add Strength to the Shoot, when the Vine begins to put forth; put it not too near the Stock, but scatter it, that the Roots may receive a Benefit: You may do the same about *Midsummer*, when the Grapes are small; all which invigorates the Roots of your Vines, and makes them yield a much greater Plenty of Fruit.

Mr. *Hartlib* says, that in *Lombardy*, &c. in *Italy*, in that Champain Country, the Vines grow in Hedges on Walnut Trees, and that they have three Harvests yearly; first, Winter Corn, which is reaped in *June*, and Vines and Walnuts are gathered there in *September*: Why may not many of our Gentlemen and Farmers improve this Way, and have a Crop that will be of Service,

O

and



and but little Labour and Expence, as well as many worthy Gentlemen in *Herefordshire, Worcestershire, Gloucestershire, &c.* who by planting in their Hedge Rows the Apple and Pear Tree, from which Fruit they enjoy a most noble Liquor both of Cyder and Perry; so that some of it, when preserved and ordered in the best manner, equal the best Wines from other Parts: It will be very little Expence after the first Plantation.

IN *France*, there are three Ways they manage their Vines in the Vintages, *viz.* In *Provence*, they cut the Vine to about two Foot high, so make it strong and stubbed as our Osiers are; which Stock beareth up the Branches without Props: About *Orleans*, they seem to be more curious; by making Frames for the Branches to run along: And about *Paris, &c.* they tie them to short Props, as is beforementioned.

Now as to the pressing of the Grapes to make the Wine, there are many Ways found out: In some Parts of *Italy, &c.* it is said, they lower it with Water upon the Fermentation, to make it less furious; which not only spoileth the Colour, but taketh away their brisk Taste: Now if the Season here be wet, as it sometimes will be,  
and

and the Grapes not perfectly ripe, yet the green Juice, when pressed and put into Hogsheds and carried into a warm Vault, will meliorate; or if not, a Vault or Cellar, with a Stove in it, will keep it warm; this Fermentation, and by standing with such a Heat, brings the Wine by Degrees to a good Ripeness, and fit for Drinking. All green Wines should thus be brought forwards before drunk, as we have some from abroad, which many Persons too often find the fatal Effects of. I once squeas'd about ten Quarts of Juice from the Gooseberry fully grown, but green, thinking to make some Vinegar, which was put into five Two-quart Bottles in a Case, and put them into the Cellar; and in about ten Months after, wanting some Vinegar, sent for one of the Bottles up, which was fine, without any Art; and when tasted, was so like the Taste of *Rhenish* Wine, that several good Judges could not distinguish it. Some of this being kept more than two Years, the older it grew the more perfect it was in Likeness to the *Rhenish* Wines.

Thus we may have divers Sorts of good Wines from our own Fruits, if we would use the Method to gather them, and squeeze the several Juices, *viz.* the Currant, Cherry,

Elder, and divers Sorts of blue Plumb, the Mulberry, &c. if when pressed you only clarify the Juices, it will make them keep the longer after Fermentation, &c. And especially to take the Raisin of several foreign Parts, and put boiling Water to them, after they are chopp'd small, about four Pounds to a Gallon; and, after letting it foment ten or twelve Days, then press it out; this makes a very good Wine: But then, if you have a Mind to add a Flavour of any of our Fruits to it, as the Currant, Cherry, Elder, Plumb, Mulberry, &c. Then after clarifying the Juices as aforesaid, add to each Gallon one Pint, or Quart, to a Gallon of the Raisins so pressed, it will give it a Tincture of each Colour, and make it a pleasant Drink: 'Tis presumed you need not put any Sugar to it, by reason the Raisins are of themselves sweet enough; but if you use the Juices of our own Produce alone, you may add some Sugar to your own Liking. By this way of proceeding there may be several Sorts of Wine made here, which to this Climate is as wholesome, as those come from Abroad; by reason we at present know not what Adulterations are used in foreign Parts, as well as here at home.



## C H A P. XXIII.

## Of G A R D E N P L A N T S.

*Of the C A B B A G E.*

**T**HE Cabbage is an Esculent, of which there are many Sorts; and most of them, as Mr. *Parkinson* relates, are much propagated in the Garden: When you have prepared your Ground, sow your Seed either before or after the Manure; let the Quantity of Manure be in Proportion to the Space of Ground you sow, be it more or less, of sixteen Bushels to an Acre; and when the Seeds are grown to a Plant of about a hand high, 'tis fit to be replanted: Then dig your Ground that you design to plant in; and after having prepared your Ground, set it out either three Foot or more, as you design the Plants to stand: Then with a hollow Trowel make a Hole, and take about a handful of the Manure and put into it, and with the Trowel mix the Earth and Manure very well together; after this is done, set your Plant in the Hole so mix'd; This mixing of the Manure with the Earth prevents any Insect from getting into the  
Roots

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Roots of your Plants ; for many Times the Worm, like a Bott, gets into the Roots, which hinders the Plant from thriving, and spoils it from Cabbaging ; and often, in a dry Time, when the Plant is grown large, the white-winged Butterfly lays his Eggs, which brings a Caterpillar at the Bottom of the Leaf, and when they come to be large devours the whole Plant ; nay whole Plats of Ground are eaten by them.

Now to prevent this Mischief, take some of the Lixivium made of the Manure, and water the Plants with it, which will destroy all the Caterpillars, be they ever so many, nor will they come there any more : This Lixivium will not annoy the Plants, except you put too much on them, but will make the Plants grow the larger, as has been often experienced.

You must not forget to mix the Manure with the Earth ; for if you plant any Roots without mixing it, and setting them in the Hole made, the Quality of the Manure is such, that it will destroy the Plant, as has been often found by Gardeners who have not followed the Directions, whereby they have lost their Labour, and condemned the Manure for what was occasioned by their own Obstinacy and Folly : For if a Vine or  
any

## Of GARDEN PLANTS. 103

any Tree is planted on the Back of a Chimney or Oven, where there is a continual Heat; this genial Heat revives the Vine or Tree, and brings it forward, when a greater Heat would destroy it. The Manure therefore must be used moderately, which makes it the more valuable; for all Excesses are dangerous to Vegetables, as well as to the Human Body. These Caterpillars have destroyed whole Grounds, which is a great Loss to those Gardeners, whose Livelihood depends on their Crops. These Cabbages that are thus managed are not so rank, but eat sweeter than those that are produced from Dung, which always adds a Rankness to every Sort of Greens, wherever it is used. The same may be done in all the several Species of this Kind, as the Savoy, &c. Do the same when you remove the old Stalks to have Sprouts, or mix the Manure with the Earth, and the Advantage will be great, as Experience will demonstrate.

As for the Colly-flower, tho' it is more tender, yet it may be raised in *August* or *September*, after the same Manner; but they must be covered in the Winter, either in a Frame, or under Bell-glasses; and when you transplant them in the Spring, mix a little of the Manure in the Hole you set them in, which will make them thrive.  
Before



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Before they come to Perfection, water the Root once with about a Pint of the Lixivium of the Manure; but at other Times water them, when wanting, either with Pond, River, or Rain Water, and they will be very large Flowers.

### *Of the* ARTICHOKE.

THE Artichoke is another Sedum or Esculent that is planted in the Garden, and is commonly set in the Month of *March* from the Eye or Off-sett that grows to the old Roots the Year before; and when you intend to plant a Piece of Ground with the Eye or Off-setts, take off the Eye from the old Root with a Fibre to it, for one String or Fibre will be sufficient to bring the Plant forward; then, as in the transplanting the Cabbage, make a Hole with a hollow Trowel, and put about a handful of the Manure in it, which you must mix with the Earth, and stir it well with the Trowel, that none of it remain in Lumps; then set the Eye or Off-sett, and it will take a strong Root, If it proves a dry Season, put about a Pint of the Lixivium to the Root of the young Plant, but not too near it; but this must be done only once in the Season, and if more Water is wanting, take Pond, River, or Rain Water, as before. You may put a  
Quart

## Of GARDEN PLANTS. 105

Quart of the Lixivium to your old Plants, and no more; but remember not to pour the Lixivium near the Plant, but at a small Distance a little round it, which will make it produce many more Heads then is customary. The larger Roots may be watered twice with the Liquor in the Summer Season, and as often as wanted with the Pond Water, &c. which will do the Plant much good; and make it eat more pleasantly.

### Of the ASPARAGUS.

THE Asparagus is a Garden Plant, tho' about *London* (as *Battersea*, &c. in *Surry*) it is planted in Fields, the Beds being about four Foot wide, and of such a length as the Field will allow. They are planted in a Trench about three Foot deep, filled with rotten Dung even to a Mould, and sifted fine; though some do it with Horse Dung not rotted, which must be trodden down as hard at the Bottom, as possible; then within about a Foot of the Top put some of the fine sifted Mould, till the Bed is high enough to receive your Plants, which must be at least six Inches above the Surface of the Ground, your Plants being a Year's Growth; then put four Rows of the Plant in each Bed, and about eight Inches asunder, till the length is full: So let them re-

P

main

## 106 *Of* GARDEN PLANTS.

main full two Years before you cut them, and they will be the stronger and better; though some cut not till three Years after they are so planted. When your Work is compleated, and Roots planted, as is before directed, then scatter some of the Manure over the Beds, not too thick, but only so much as will colour the Earth; and as the Rains and Dews fall and dissolve the Manure, it will soak into the Beds: Do this twice a Year, and no more; the same to the old Beds, and not oftner, which will make them grow stronger, and encrease in Number of Heads: But 'tis found by Experience, that if you make a Bed of fine and good sifted Mould, with three or four of the Seed put into each Hole, about two Inches deep and eight Inches asunder, and let them grow, and not remove them, only manuring the Ground twice a Year as is before directed, you will thereby save one Year's Growth, or cut them sooner; for the removing the Plant from its first Growth gives a great Check to it, and is a Hindrance of one Year or more to recover the same Strength it had.

### *Of* SALLETING *in several Parts.*

WHEN you have prepared your Ground or Beds, where you design to have your Salletting



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Salletting grow ; then scatter the Manure on the several Beds you design to sow before your Seeds ; then rake your Beds, that none of the Manure lie in Lumps ; or if you have a small wire Sieve, sift some over very thin ; then sow your Seed ; and after you have sow'd the Seed, and raked it, then sift a little more of the Manure as thin as possible, which will preserve your Seed, upon its first appearing above Ground, from Slugs, Snails, Worms, or any of those other Insects, that many Times destroy a whole Bed : And when you transplant any of these kinds into other Places, for the better and larger Growth of the Species, prepare your Beds with sifted Mould, if possible mixed with the Manure, by which Means you will not only preserve your Plants from being eaten under the Earth, and from the Slugs and Snails above, but also have a larger and more delicate Kind to eat.

### *Of the CUCUMBER, MELON, &c.*

THESE Seeds are generally \*raised in a hot Bed, if desired to be had early, for our Climate will not admit of its being sown in the naked Ground till *May*, by reason the Plant is so very tender at its first Appearance ; as also the Runners are soon check'd or blighted with any little Cold or Wind :

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They must be, at the first growing, diligently attended, and watered with Pond, River, or Rain Water; for Pump Water is too cold for the young Fibres, and hinders them from thriving. There are found out by the Ingenious divers Ways of making hot Beds; but the most common, and durable, is the Horse-dung or Litter well trod into a Trench, and made as solid as possible, let it be staked or bound about with Straw or Hay-bands, to keep it together, to about three Foot high, and four Foot wide; then sift about six Inches of good Mould, or thorough rotten Dung, or an old Melon Bed intirely turn'd to Mould; then cover it with Frames or Glassés, as suits your Conveniency, and let it remain till the Fermentation, or great Heat is over, which will be in three or four Days; you may try with your Finger, for if you can't bear your Finger in it, it is not fit for your Seed; then after this Heat is gone off, put in your Seed; and when your Seed is in, scatter a little of the Manure over your Bed, very thinly, which will prevent the Slugs, Snails, or Worms from annoying the Plants, as many times they do: When your Plants are grown fit to remove, then thin them, and transplant those which are to grow up in another Place (letting those remain that you design shall grow in your Frame) to  
some

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some prepared Ground, covered either with a Frame or Glafs.

Now after your Plant is thus raised in your hot Bed, a lesser Heat will serve to bring them forward; as a Bed of an old Cucumber, or Melon Bed, of the last Year, prepared after this Manner; first put on the old Bed about an Inch thick or more of the Manure, to prevent any Worms from rising, as will be naturally bred in the old Beds; then put some Pigeons and Fowl's Dung mix'd together, about two Inches thick; then put about an Inch thick more of the Manure, and spread it as even as you can; if you require it hotter, put more of the Pigeon and Fowl's Dung; then over all, sift about six Inches of the best Mould; then put on your Glafs or Frame with Glafses: After your young Plants are set or planted, which, with watering them, as is before said, will grow very strong, and produce a very good Fruit: All the Species of the Melon Kind may be raised after the same Manner, only they do not require so much watering as the Cucumber: When you water, do not let any touch the Leaf, but put it to the Root only. Also I have seen very good Melons raised from the mowing of the Grass-walks, and likewise from Weeds cut green, and put into a Hole,



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Hole, to contain about a Bushel or more; then tread in your Grass as close as you can; then cover it with some good Mould finely sifted, to be about six Inches high from your Grass, and cover it with a Bell Glass; and when it begins to ferment, put in your Seed of the Melons, for this Heat is not so hot as the Horse Dung; and from this Way I have seen as good Melons raised as the best Artist could do. When your Beds are thus prepared, scatter some of the Manure very thinly over the Bed, to prevent the Slugs, &c. from preying on the young Plants.

Now when the Season permits to sow your Seed in the open Ground, you must dig a Plat in your Garden to what Quantity you intend to plant out; and if your Ground is not good by Nature, then sift or screen it, that the Fibres of the Root may have more liberty of shooting. When your Ground is thus prepared, make little hollow Holes, like a Dish, and put three, four, or more Seeds about an Inch deep into the Ground; then scatter some of the Manure thinly round the Holes, to prevent Slugs, &c. then cover the Place where the Seed is with a Cabbage, or some other large Leaf, to keep off the Sun's Heat till the Plant arises above Ground, and water them a little till you see the Plant up; then you may put  
more

## Of GARDEN PLANTS. III

more Water, for too much at first may rot the Seed. When your Plant is up, and got the fourth Leaf, if you have Occasion to remove any, you may do it, but not before, for no Plants of what Kind soever ought to be removed from their Seed till the fourth Leaf, Nature having then a little Strength to support itself by a small Addition of its Fibre upon the second Shoot, which is not so upon the first emitting of the Seed for Generation. When the Vines of your Cucumber has run as far or as long as you desire, then nip off the End of the Runner, which will make the other Part sett their Fruit, and those left grow the better, by reason that the Vine of the Cucumber is stopt from drawing the Sap, which will add to the Fruit's growing sooner to Perfection; and many say, that 'twill blossom more in the Shoots left, and cause fresh Shoots at each Joint, for the Produce of Fruit.

WHEN you sow the Pompion, put the Seed into the Ground about the End of *April*, at least a Finger's Breadth; and if 'tis sown on any old Dunghil, it will grow and spread a great Way.

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### *Of the ONION, LEEK, &c.*

THESE Roots are much in request, tho' chiefly for the Kitchen: They love a good warm Ground, and may be sowed in *February* and *March*; some sow them sooner, but then if the Frost come, Care must be taken, else you may be obliged to sow again. After you have sown the Seed, scatter some of the Manure over the Bed, but not too thick: The same must be done with Leeks.

Now when your Onions are come up, if they are too thick, they must be thinned either by pulling them up to eat when young, or be transplanted into some other Place: And the same must be done by the Leeks; but when you transplant the Leeks, they should be set in a Hole made pretty deep: Before you set them, put in a little of the Manure, and with the Trowel mix the Earth with the Manure, as is before directed; then set in the Leeks; by doing which, you'll soon see by its Growth that your Labour is not lost.

THE Winter Onions must be sowed in *August*, in the same manner, and then you will have them in Order before the Cold comes;



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comes; and when they are thinned, the Remainder will be good Onions next Summer; if they grow too strong in the Blade, tread them down with your Foot, which checks the Sap, and makes the Root increase and be larger.

THE Garlick and Skerrots, &c. must be sowed as the Onion and Leeks; and must be ordered in the same Manner.

### *The several Sorts of HERBS in general.*

THE Spring Time is the most proper Season for the sowing of the several Sorts of Seeds, that are to be provided for the Kitchen, as well as those for Medicinal Uses: Beds are to be prepared, as has been before related; and after the Seeds of each Sort are sowed, sift some of the Manure over the Beds, which will defend them against all Slugs, Snails, &c. give a Vigour to each Plant, and make them grow stronger in their Roots, and will add also to the several Species in their Seeds, by the hidden Quality of the Manure; for every Shower that falls, as well as the Dews, dissolve its nitrous Quality, and in fact makes it the Life of every Vegetable: The finer the Ground is made by sifting, &c. as well as good digging, the Plants will shoot with more  
Ease,

## 114 *Of* GARDEN PLANTS.

Ease, and receive the Rain and Dews with greater Freedom; but when Stones, &c. are in the Ground, they obstruct the small and tender Fibres of each Plant from taking the Benefit of their Mother Earth.

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### C H A P. XXIV.

#### *Of* FLOWERS.

##### *Of the TULIP, and other Bulbous Roots.*

**O**F the many Sorts of these Bulbous Roots, none are more respected in Parts abroad than the Tulip; for, in the Gardens in *Holland*, they have been valued at a very great Rate, though at present they are much abated of their Price; but still some of them are valued at thirty or forty Guilders.

As to the Planting them, the Ground must first be sifted very fine, for all the Roots of these Kinds shoot forth a small tender Fibre, so that the least Obstruction hinders the Bulb from thriving: Now after you have fitted your Ground (which must be a light Earth) for setting the Roots, set your Roots about four Inches deep, and about the  
same

same Distance from each other ; whereby the Fibres will have full Liberty to shoot and consequently make the Roots increase and be the stronger, and shew his Blossom the fairer : After you have set the Root, about the latter End of *August* or Beginning of *September*, in good light Earth, or rather on a sandy Ground, wherein no Dung is to touch the Bulb ; then spread or sift some of the Manure very thin over the Bed, by which Means no Worms will abide there to annoy the Roots, nor any Slugs touch the Leaves : When they come up in *March*, &c. then a little more of the Manure may be thinly spread on the Bed ; but Care must be taken not to let any of it fall on the Leaf, or into the hollow of it : This little Care will answer all your Purposes.

THE Tulip produces his Blossom or Flower from the old Root, and changes every Year and becomes a new Root, as do most of these bulbous Kind, whose Stalk and Flowers grow from the middle of the Bulb : Their Increase is from the Bottom of their Roots, and the Stalk that shoots from the Semen in the middle of the Roots, produces the Stalk, Flower, and Seeds of Tulips, &c. which falls away after the Tulip hath done his Operation, as is before-said : The new Root is produced from the



Bottom of the old Root, whilst 'tis in Vegetation to its productive Part; as Stalk, Flower, &c. which feeds it till it hath quite lost its Force; and then the Stalk withers about *June*, and remains fix'd to the new Root or Bulb. The Tulip, and most or all bulbous Roots, love a fresh loomy Ground, not stiff; the finer it is sifted the better, and none of the Manure should be put to their Roots: Remember likewise that all Spring Flowers should be put into the Ground in Autumn or *Michaelmas*, and those that blow in Autumn, &c. in *February* or *March*.

Now to have new Faces, of different Sorts of these bulbous Roots, or indeed of any other Sort of Flowers, they must proceed from the Seeds of each Flower; and as the Tulip Seed is long before their Flowers appear, yet when the Seed is sowed from good Flowers, they will answer the waiting so long as six or seven Years; I believe none more than the *Dutch* have found their Account in so doing, by the many and several Sorts of Breeders they have raised, which they sell at great Prices; some of their new Breeders, and such as produce a bold Flower with a large strong Stalk to about three Foot high, are sold for Five Shillings a Root: I once sowed the Seed  
from

from some of the *Triumph of Europe*, which I had from *Holland*, and waited for the Blowing; some came in five Years, some in six, and some the seventh Year; and from them came many Sorts, of what is called the Mother Colour, of different Kinds; some broke into very fine Colours, but at their breaking into Colours they shew'd how Nature sported in the Variety of them in each Blossom; for in the same Quarter were divers Beds of Tulips that had broke from the Mother Breeders I had brought from *Holland*, as the *Baggot primos*, the *Incomparable*, the *la Reine de Mere*, the *Baggot Regeau*, and several other Sorts of good Tulips; and from these Blossoms in their Flower-leaves of the seedling Tulips, were Appearances of most of these broken Tulips; which shews (how surprizing soever it may seem) that the Farina, or Dust, that is at the Bottom of each Tulip, or from any other Flower, should get into the Seed Vessels of that which stood twelve or fourteen Foot from it; though 'tis conceived the Wind carries these little Particles, like Dust, from each Flower, to incorporate its Colour in the Seed Vessels of one another: But it is my Opinion (and it hath been approved of by some ingenious Gardeners and Persons of Speculation) that the little busy Bee, by searching into every Blossom, and out again in a Moment, carries  
some

some of the Farina that hangs on the Petulants of these Flowers, along with it to each Flower, on its little hairy Legs, which incorporates with the Farina of the other Flower, before its Vessels are set to inclose its Seed; by which Means so many Colours are struck in Flowers, that blow at the same Season, if standing near each other, that it becomes sometimes a Wonder: Though some Part of it may be accounted for this Way, yet I leave it for some other more curious Enquirer into Nature to find it out more perfectly. Again, another Way I conceive whereby you may have different Colours in your seedling Plants, as of Auriculas, &c. that blow at the same Season, is to mix divers Sorts of Flowers, of the Colours you like best of the same Time of Blowing, on a Bed together, whereby you may have them of various Colours: Some think that many Times the little Fibres in the Earth, mixing together, cause a Variegation in the Leaves and Flowers, &c. I knew a gilded Philirea give the same Variegation to a Jessamin in its Leaves; as also the gilded or Orange Mint growing under an Apricock Tree, variegated the Leaves of it. Pots also standing near one another with Flowers, may by this Means mix their Farina; as when you intend to save the Seed of any Flower: You may have a  
Flower



Flower from a Seedling worth all of that Kind you had before.

N. B. SOME that are curious, and have not prepared so much Ground for their Tulips as will be a full Bed, make a Hole pretty deep with a Dibber cut flat, or Trowel, and put some fine Sand at the Bottom; then put some good Mould after it to set the Root in, that it may strike its Fibres in it, which will make the Root thrive, and produce a fine Blossom.

Of the AURICULAS.

THESE are Spring Plants, which flourish in *April*, and are very beautiful; and when Care are taken of them, the various Sorts make a fine Collection among the Florists, which Collection is generally set in a little Pot on Stands in the Garden, out of the Rain, which spoils the Beauty of this Flower, by washing the Meal that is on it, which adds to the Pleasantry of it: Now these are commonly raised from Seed, which produces new Faces, and very much delights the Florists; and the Flower is commonly called after the Name of the Gentleman or Gardener that raised it, so that they are known by the Names given them at their Feasts, which are either by their own Names,

Names, or those of the King, Queen, Duke, Dutchess, &c. There is no Way to get these new Faces, or new Flowers, of any Kind or Specie, but by the Seed; for the Increase of old Plants by their Off-sets, of every Specie, are generally the same as the Mother Plant; therefore the Seeds of these Plants should be carefully saved: If they are sown when they are ripe, and a little hardened, they may appear above Ground that Season, before the Frost comes to check them; and when the Frost comes, they must be sheltered from it under a Shed, but no longer than that lasts. When the Seed is sown, it must not stand dry, but kept watered, else it will not come up till the Spring; and when 'tis sown in the Spring, it must also be kept moist; and when the Seed is up in *April* or *May*, it must be set in the Shade; for the young Seedlings being yet tender, will not endure the Heat of the Sun, but will soon be parched up by its scorching Heat: You must sow the Seed in very fine sifted Earth, covered over with some Willow Mould finely sifted; then scatter your Seed thinly over the Mould; it will sink deep enough into the Mould with flattening it with the Palm of your Hand; for this Seed, if put too deep into the Earth, will be a long Time of coming up, if it ever does; for many Persons lose  
this

this and many other such small Seeds, by sowing them too deep: As they increase in Growth, let them be transplanted into other Pots or Cases, till they are strong enough to be put into Beds in your Garden, or into little Pots to blow in; the Composition of Earth that this Flower likes best; as hath been experienced by many, is this: Take six Barrowful, more or less in Proportion, of rotten Dung, that is as it were Mould; let it be of Horse or Cow, either will do when rotted to Mould, and sift it through a Wier Sieve; then put one Barrowful of Sand, and one Barrowful of the Manure, mix these together, and let it run thro' a Sieve to mix it the better, whereby you will prevent all Worms and other Insects from harbouring in the Mould, and the Flowers will shew themselves in better Strength at their Blowing: When you design to preserve the Seed from your best Flowers, as they generally are such as you put in the Pots to be on Stands in the Garden, let not the Pots stand long under the Shed, for that draws your Flowers, and the Stalks become weak, and many Times wither, when it comes into the Sun and Air, by being too long kept under Shelter; so that the Seed of the best Flowers will be lost for that Season, which to a Florist is more valuable than the Flower itself. I had once vast Variety in saving

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the



the Seed of a Row of Auriculas Plants, in Pots standing by a long Bed of Polyanthos of divers Sorts. Thus almost any Colour may be intermixed with Flowers blowing at the same Season, and placed near one another.

*Of the ANEMONE.*

THIS is a Spring Flower, and delights in a loomy Mould, that is fresh out of the Common, or any other Ground that is not stiff, and mix some good Mould with it, to separate it a little; to about six Barrowful, add one of the Manure, mixing it well together, either by sifting or otherwise, which will prevent the Worms and other little Insects, as the Millepedes, &c. from lurking and hiding themselves under the Roots, as they do in these Roots, where you'll find them when taken up to dry. There are divers Sorts in *England*, (tho' the *Dutch* seem by their Catalogue to have many more Sorts, and some at large Prices) which may be planted or set in the Ground, to come up several Months following, after one another, by beginning to plant them from *September*, and so on to *March*, and some of them will blow from *December* to *May*. Now the Seed must be sowed when it is dry, and must be gathered before it is quite ripe, else  
if

## Of FLOWERS.

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if any Wind comes, it will all blow away; whence it is called the Wind Flower: You may sow it in Cafes or Boxes, or in a Pot with a fine Mould, which will produce you many new Colours. There are many of them raised about *Battersea*, in *Surry*, and in the Gardens near adjoining, by divers Names.

## Of the RENUNCULUS.

THOSE called the *French*, are become now most in Request, and are much increased by their Seed, which is sowed in Cafes or Borders, and will endure the Winter with us, if not extreme hard; when they came first to these Parts, we were so fond of them, that by nursing them too much, many were lost; they love a fine sifted Mould, mixed with a little rotten Dung; they will agree and thrive very well with the same Mould as you prepare for the Auriculas; that mixed with the Manure, will very much increase them, and will prevent the little Insect called the Millepedes, as in the Anemone, from harbouring in the Root, as they otherwise will do: The Variety of double Flowers is very agreeable, and some very large, as I have seen in the Gardens at *Clapham*, *Barns-Elms*, *Mitcham*, *Mortlack*, and many other Places,

as about *Chelſea*, &c. The *Dutch* have great Variety of theſe, and many other Sorts, which encrease very much from their Roots; but if you expect any new Sorts, they muſt be raiſed from the Seed which is ſaved after the Blow of the Flower is over: When the Seed is dried a little, ſow it, and ſome will appear at the latter End of the next Year, or the Spring following. The ſeveral Sorts we have here may be encreaſed the ſame Way.

Of the HYACINTH.

THIS is a Spring Flower of the Bulbous Kind, and hath many Fibres: There are many Sorts of this Flower, as the white, blue, and fleſh-colour, both ſingle and double; ſome of them flower early in the Spring, and muſt be put into the Ground in *September*; they muſt not lye out of the Ground, for the Root is ſo luxuriant, that it will periſh if they do: The *Dutch* have many Sorts, both of the ſingle and double, and value them at a very great Price: They increaſe very much from the ſingle Sort, which is very prone to produce Seed; and it does the ſame with us here, whereby many new Sorts are raiſed, and very beautiful when in Blow; the double very ſeldom gives a Seed Veſſel, but ſometimes



times it does, the Seed of which is very valuable, and with Care will produce a fine Flower: The Seed must be sown in Cases, or Boxes, and must stand two Years before they are removed; then plant them into Beds, well prepared and sifted very fine; they love a fresh loomy Mould, not too much Dung, by reason it may rot the Roots, and planted in some dry Bank, or Bed, for they do not love too much Moisture, because the Root itself is of a moist Nature; The Seeds may be planted in Beds, but being small upon their first Growth, they are more subject to be lost, except the Ground is sifted through a very fine Sieve, when they are to be removed.

WHEN they are planted in *September*, in Beds or otherwise, put them in about three Inches deep and about four Inches asunder; When your Bed is full, cover them thinly with some of the Manure; and when they do appear in the Spring, sprinkle a little more of it, but not on the Leaves, whereby your Roots will increase and be the stronger; it will likewise make them blossom more, and be larger Flowers. I had many Hundreds from every Sort, both of blue, white, &c. from the Seed, some in three Years, and some in four; by which Means we may enjoy as great a Variety as  
the

the *Dutch*, who value some of theirs at sixty Guilders or more: The sowing of the Manure prevents the Worms and other Insects, as is before mentioned, from lurking in the Roots, either in the Winter or Spring.

*Of the NARCISS.*

THIS is a Spring Flower, and blows early, of which there are innumerable Sorts; for I have had above sixty Sorts from *Holland*. If planted in good sifted Earth they'll grow tall, and bear many Blossoms on their Heads, and afterwards yield Plenty of Seed, which may produce many new Kinds. They need not be removed every Year, like other Bulbous Roots, but as the Roots increase in Strength and Off-sets, they must be moved to make room. These Roots will lye as long out of the Ground as any Root, having a very thick Coat to defend themselves. I have raised many of them from the Seed; though 'tis as well to buy them, as to wait for them from Seed, they being a Flower of small Price; yet the *Dutch* value some at two Guilders a Root. After the Leaves are cut off from the Ground, where they grow to flower, &c. sift some of the Manure, which will increase them, and cause the Roots to shoot

## Of FLOWERS. 127

a strong Stalk the next Spring, and make more Blossoms on the Stalks.

### Of the CROWN IMPERIAL.

THIS is a Spring Flower, and comes early; the *Dutch* have many Sorts of them that are not seen here; for they have near fourteen Sorts, and we have not above four. They like a good fresh Mould, and will thrive almost any where; but if a little Care is taken of them, they'll blow strong the Beginning of *March*; if they are put into the sifted Earth among the Spring Flowers they'll give a strong Stalk and larger Blossom. I have saved the Seed and sown it, but the Time of their Blowing from Seed is as long as the Tulip; though from thence it is you must expect new Faces. The *Dutch* are very patient in raising from Seed all Sorts of Flowers, by which Means they are become the greatest Florists, and many of them are thereby grown very rich.

### Of the I R I S.

THIS Flower, of which there are many Sorts, blows in *May* and *June*. There are above twenty Sorts in *Holland*, and many new ones are raised from Seed. The *Iris Calcedonica*, which we have here, is a very beau-



beautiful Flower; it is also called here the Toad Flag, having its Leaf spotted like the Belly of the Toad: They all love a fresh loomy Soil, sifted fine, which makes the Root grow larger, and strengtheneth the Stalk and Blossom, especially if the Manure is sifted thin over the Bed, before they appear above Ground. The Seed may be sowed in Boxes or Cases, for two or three Years, after which they will be large enough to transplant into Beds. When you sow your Seed, sprinkle a little of the Manure on it after 'tis sown, which causes them to shoot sooner, and makes the Vegetation stronger.

*Of the TRITTALARIA.*

THIS Flower blows in *April* and *May*, and sometimes sooner, if the Bed they are planted in lies in a warm Aspect: There are many Sorts of them, the *Dutch* having above thirty Sorts: They may be raised from Seed as other Flowers are, from which many new Sorts may spring: The Seeds of the best Sorts must be sowed as the Tulips, and from them will be produced many that may be valuable. Put the Manure on the Bed, as is directed before.

*Of*

*Of the CYCLAMEN or SOWBRED.*

OF these are two Sorts, the Vernal and the Autumnal; the *Dutch* however have eight Sorts; and that which they call the *Odoratus*, or sweet-scented with red Blossoms, they value at three Guilders. This Flower scatters its Seed as soon as 'tis ripe, and from thence will be produced many new Roots. It grows flat and round, like a Turnip, which may be divided into Parts, but they are sometimes lost, if Rain follows the cutting; but if you sprinkle some dry Dust when you cut them, to dry up the Moisture of the Root that issues upon the Division, it may preserve them; the Leaves come up after the Flower. Scatter the Manure thinly under the Leaves, which will make them blow stronger, and increase the Roots; or you may scatter some of it over the Bed in the Spring before they blow, or appear above the Ground.

*Of the LILLY and MARTAGONS.*

THESE Flowers, of which there are several Sorts, love a light Ground, and will increase very much. The *Dutch* have a Sort which they call *Lilium Album Maculatum*, whose Root as well as Flower is  
S striped

striped with a Purple Colour, which makes it very pleasant to look on; but the yellow striped Lilly is very much valued here, because it holds its Leaves all the Winter. The Manure must be scattered on them, when the Leaves are off, as they are in *July* and *August*.

THE Martagon being a Lilly (though in the Blossom it is different from the other Specie of Lillies, having its Blossoms turn'd back, which has also the Name of the *Turk's Turbant*, or curl'd Lilly, whose Blossoms hang downwards with their Petals) their Culture are in all respects order'd as the other Lillies: These Flowers are some of them yellow, some scarlet, with various Spots: There is also a sort that comes from *Virginia*, which is very beautiful; they all increase very much from their Roots, and may be raised also from the Seed as the other Sorts of Flowers.

*Of the CARNATION or JULY FLOWER.*

THE Carnation is a Flower that is the Gardener's Pride; and many Sorts, if raised from Seed, are brought to their yearly Feasts to be named. No Flower hath more Sorts than this, and none are more taken care of, to make them appear beautiful.

It



It will last after it is blown as long as most Flowers, and gives a fine Scent as well as beautiful Colour. The Earth it delights in is mixed divers Ways; but that which the Curious make use of, who put each Plant in Pots to make them grow large, is as followeth: Take fine sifted Mould, with a little Mixture of fresh Earth, to about six Barrowful of Mould add one Barrowful of drift Sand, and one Barrowful of Manure; mix all well together, and let it run through a wier Sieve to mix the better; then keep it dry, till it is wanted for the Pots or Beds to plant your Flowers in: There are many new Faces raised every Year from their Seeds, which make the different Kinds almost innumerable; the long podded Sort are much admired among the Curious in two Respects, *viz.* Blowing without any Trouble, or Bursting; whereas the round podded must be attended, and the Pods opened, else they will not shew their Blossoms to any Advantage. As to the Management of this Flower in general, it is so well known among the Florists, that it is needless to repeat it; and besides, what relates to this, as well as many other Kinds of the bulbous rooted Flowers, has been already fully treated by Mr. *Bradley* and others, whose Ingenuity in Gardening will always shine.

As to the bulbous Roots in general, they may be used in the same manner as hath been shewn before, as to the setting them in Pots or Beds; and when they are planted, sift some of the Manure thinly over them: But always remember that the Spring Flowers are to be set or planted in *August* or *September*, and the Autumn Flowers in *March* or *April*; and a little before each Sort appears, either in the Spring or Autumn, sift or scatter some of the Manure about the Plant, in the Bed or Pot, to prevent any of the Insects from harbouring in the Roots, &c.

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## CH A P. XXV.

### *Of SHRUBS in general.*

**W**HEN you plant any Shrubs, mix some of the Manure with the Earth; to each Plant or Shrub mix about a Pint of the Manure, such as the Rose, Mezerion, Syringos, &c. Let it be mixed very well, that none of it may lye in Lumps; then plant the Shrub in the Earth, but not too deep. After your Shrubs have been planted, and taken good Root, they may be watered with some of

*Of SHRUBS in general.* 133

of the Lixivium twice a Year, as other Plants, *viz.* in the Spring and Autumn, which will make the Plant thrive, and increase both in the Body and Flower; but if you have none of the Lixivium, then, at the same Times of the Year, sprinkle or sift some of the Manure thinly over the Bed where they grow: To the bigger Plants, you may put about a Quart of the Lixivium round about the Plant, but not too near the Stock, only so as the Roots may receive the Benefit of it: This invigorates not only the Trees, but all the other Roots in the Bed or Quarter, whether bulbous or others; but be sure to scatter none of the Leaves of Plants, but only about or under them.

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C H A P. XXVI.

*Of GREEN-HOUSE PLANTS.*

**W**HEN you put your Green-House Plant into the House, after you have given them fresh Earth, as usual (which is always necessary, by taking about four or five Inches of the Top Earth out of each Tub or Pot) then mix two Gallons of the Manure with twenty Gallons of River, Pond, or Rain Water, stirring it well about the  
Tub



### 134 *Of GREEN-HOUSE Plants.*

Tub or Vessel in which it is put; let it stand twenty-four Hours, or more, 'till the Water hath imbibed the Strength from the Manure, and then water your Plants in the Tubs or Pots, according to their Size; your large Orange-Trees with about a Quart of the Lixivium will be a sufficient Quantity, and to the smaller Pots, &c. about a Pint, and no more. Let this watering be only twice a Year; the first when your Blossoms appear; the other, at the carrying them out, after you have given them the same refreshing of Earth, in *May*: But you must water those Plants when they are in your Green-House with Water, either of Pond, &c. that has stood in the House some Time to have the Cold taken off, for fear of too much chilling the Roots; but water them no oftner than pure Necessity requires, which must depend upon the Judgment of the Gardener. It is likewise the Part of the Gardener to keep such a Heat in his House, as will preserve his Plants in the extreme Cold; for many of the Artists keep so great a Heat in their Houses, that it draws their Plants too much, which makes them weak and sickly, and then any little Check makes them ready to expire, and very often die. Therefore, 'tis conceived, no House ought to be hotter than those Months are wherein they may safely stand out, which is from the  
Middle

Of GREEN-HOUSE Plants. 135

Middle of *May* to the latter End of *August*, which may easily be known, by placing a Barometer in the House, (except some of those foreign Plants that come from the extream hot Climates, as the *Annanas*, &c. which require a more violent Heat than our Climates admit of.) Now, as those Plants that do not require the Heat of the Green-house, but only a Shelter from the Severity of the cold Air, as the Myrtle, Striped Philireas, Yellow Jessamine, the Rose Bay, or *Oleander*, the *Indian Bay*, &c. These, after they have been refresh'd with Earth, as is before said of the Oranges, &c. must be water'd with the Lixivium, in proportion to the Plant, as is before directed; and if you have a Mind to increase the Myrtle, or any of the other Shrubs that you like, about the latter End of *July* or *August*, cut some of the present Year's Growth, or Shoots about a Finger's Length, and take a Pot, with some good Mould mix'd with a little of the Manure, as has been directed before, and set the Cuttings of the Myrtles, &c. with a small Stick, or Piece of Tobacco Pipe, round your Pot, in as many Rows as it will hold, so deep that you may only see the Top Leaves a little above the Earth; afterwards water them gently with some soft Water, and set them in the Shade, and all, or most of them, will grow, and become  
good

## 136 Of GREEN-HOUSE Plants.

good Plants, if Care is taken of them. The same may be done of the Honey-suckle, only their Cuttings must be taken sooner; but always remember to set them as deep as they will possibly bear, and cut them about a Foot long: Keep them well watered, and in the Shade, till they take Root. In the same Manner many of the flowering Shrubs, as well as other Trees, may be increased, by putting them at first in Beds or Quarters in the Shade.



## C O N C L U S I O N.

*Some Observations of the Works of Nature in Vegetation; and also some Operations of the MANURE on the same.*

**A**S Nature shews herself in nothing more than in the vegetative World, and her Works have from all Ages been the Admiration of most Persons, be they Philosophers, or any other of the Learned of whatsoever Degree, who have bent their Study to find the hidden Meanders, by which she works to bring her Matter to Perfection.

AND



AND tho' many have from the first Age searched to find out the Traces, how she produces so many and so great Variety of Species from the same Mother (Earth) and each to be supplied with so many and almost different Juices, not only for Food, but also for medicinal and ornamental Uses on this habitable Globe.

So that the Source or Cause of so great a Mystery, is the Wonder of the whole Race of Men; and in fact past their finding out. And as the Great and *Wise Creator* hath put his *Fiat*, and hath determin'd every Species of Greens, of various Shades, as well as Fruit, Flowers, &c. by which each Sort is known; and by which he shews his *Omnipotence*, and the Rule by which he governs; so there appears in the smallest Plant as regular a Formation of his *Divine Order*, as in the bulkiest Things; and the Gradation it acts by is his *Divine Will*.

AND as every Climate hath Plants agreeable to the extreme Heat and extreme Cold, it evidently appears, that the *Divine Wisdom* has so ordered and decreed, that every Thing that moveth upon the Face of the Earth should receive Nourishment from it, to support Life under the Uses thereof; so

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likewise

likewise it is by his *Divine Will*, that nothing can possibly change its first Form or Image, (except by some monstrous Act) and even then there will appear some Part of the Original ; for the Whole cannot be defaced : Though an Apple or Pear may be varied in Colour or Taste, yet no one can make an Apple a Pear, or a Pear an Apple.

THIS shews, that every Part of Nature acts solely by the Decree of *his Power*, from the minutest Thing that moves, both above and under the Earth, wherever the Appointment of *his Will* hath allotted ; and all receive their Nourishment from the same Mother (Earth.) Who can contemplate on this, and not adore the Author of these Great Works ?

THUS we see, that from the Act of Vegetation every Thing enjoys Preservation of Life ; and ought we not to pursue those Methods which the *Divine Power* hath shewed us, how we are to preserve Life, and improve it to the utmost we can, in all and every Part : And as several Attempts have been made, and new Discoveries found out in the Searches after Nature, to render this great Work compleat, so we daily see, by the industrious Care of some Persons, how most of the Plants of every Climate  
are

## CONCLUSION. 139

are brought to grow in One; as in the Physick Garden at *Chelfea*, under the Direction and Management of the ingenious Mr. *Miller*, who hath shewed his Knowledge both in the Theory and Practick Part upon most Plants; and the same in many Noblemens Gardens, both here and Abroad.

THE Searches into this great Mystery are so delightful and pleasant, that but very few (who have Opportunity, Capacity, or Substance to support it) but will by themselves, or Assistance, have a Garden to divert (as it is call'd) their Leisure Hours from the Fatigue of Business, which very many, if not all, covet.

THOSE, who for the Sake of Contemplation, (if not taken up too much with that called the worldly Affair, which must be soon parted with) delight in Retirement, and have more true Enjoyment in a Day, than in a Month otherwise; for *there* is pure Silence and Nature, and in the other, Noise, Hurry, and Uneasiness. 'Tis for the Sake of true Knowledge, which kindles in such Persons this Desire, and is what they covet to enjoy, though they cannot command it.

AND if some of our Ancestors had not had such Desires of Improvement, how many



ny Families at this Time might have been destitute, when a few Acres of Wood-land often recovers almost lost Estates; and preserve Fortunes for younger Branches, which otherwise must have been turned into the World under great Distress: Therefore, should not the present Age have a View to Futurity, as well as our Ancestors, that they may be remember'd when they are no more; especially when the Expence is so small, compared to the Benefit received? Such Improvements are delightful while the Planter is in Being; he sees his Industry prosper; and when Timber is come to Perfection, 'tis as necessary to fell it, as 'tis to cut a Crop of Corn when it is ripe, for the publick Use: But then the Person, who is so happy as to enjoy it, should not neglect the the Planting again, that his Labour might continue a Benefit in the like Case; else he becomes a Destroyer, and does a Prejudice to his Country, as well as to his Posterity: This is incumbent on every One, in respect to Futurity.

As for Gardening, Orchards, &c. they are enjoy'd by the present Possessor, as well as the former; therefore the Person who follows this Rule, and serves his Country and Posterity, will, no Doubt, receive a Blessing, in answering the Intent of the  
*Creator*

*Creator in his First Command, Increase and multiply, and replenish the Earth.*

How many Enquiries and useful Discoveries have been made by that learned Body the *Royal Society*, within a few Years past? and there is no doubt, but the same will be continued till Time shall be no more, by those whose Genius leads them to it, and study it for the Benefit of others, who have not Time or Capacity to do it,

THEREFORE this Talent is given them by the *Divine Power*, as his *All-seeing Wisdom* directs; and that thereby every Country may serve each other in their respective Wants, so that a Commerce and Trade, as well as a Dependance, should be established round the Globe: This, 'tis conceived, was chiefly intended by the *Divine Will*, though put to quite another Purpose, by those whose Ambition and Envy have destroyed many Millions of People to satisfy their Pride and Avarice.

FOR, as the *Divine Power* never created any Species, either Animal or Natural, but what the Earth was sufficient for its Support, (especially of the human) yet many, and large Tracts of Land lie to this Day uncultivated in every Region, which

which might be put to some proper Use for that Purpose: And as He hath given to Man, Reason to act, and improve His great Goodness, will he be idle in this State, and, like the Beast, partake of the Benefit, without adoring the Wisdom of the *liberal Dispenser* of it? And where the Climates are so extreme hot, and but very little Rain falls to support the Plants in those Regions, the *Divine Wisdom* hath supplied the Defect, by the Exhalation of the Sun, which sucks up the Dew from the Waters, which distils, or falls on the Earth in the Night, to feed and support their Fruits, and bring them to Perfection; else they would be burnt up by the excessive Heats: So that their Species are preserved for the Benefit of his Creatures allotted to those hot Climates; all which shews his just Order from the Original of Time to have been, and is like so to continue to all Ages, which shall come; except, by any just Cause, he should determine it otherwise, which alone is in His Power: For, if He with-holds his Rain (which is, in Fact, the Food of Plants) a little longer than usual, how many of the annual Species suffer, and languish away, and die, for Want of the customary Blessings that are given for their Support? And 'tis not only the Summer's Heat that destroys, but the Severity of the Frost does



does the same, when it pierces the Earth beyond the Extent of the small Fibres, which Nature has allotted to be fed from its Mother's Bowels; and if the subterraneous Heat and Moisture should not supply respective Benefits to the smaller Plants, or Shrubs, as it does to the larger (whose Depth of Root does exceed the smaller) these small Plants, on such Extremity (be it from Heat or Cold) would be lost or destroyed: But the *Wise Providence* has so ordered it, by their Seeds, that the Face of the Earth should be every Spring as finely adorned with the annual Produce of Plants and Flowers as before; so that the same Species appears, as if no Defect had happened, and that there might not be any Want, or Disorder in the Creation.

THESE Supplies of Nature carry with them in every Specie such a providential Part, that no human Person could form, be their Judgment ever so strong, or their Experience ever so long: This great Perfection *shews* more than what can be derived from the weak Judgment of human Nature: And their Continuance for so many Generations, is a plain *Demonstration* of the Great Oeconomy of the first Decree.

WHAT

WHAT human Power could form any thing so beautiful and perfect, as all the Parts appear in? What human Art could form such a Mother, as should (from all Ages past as well as to come) bring forth such a Supply of every Sort and Kind, to feed and nourish every several Specie of Nature, both above and under the Earth? Who but the *Omnipotent* could see so many Ages to come, and decree and order this Great Work, and the same to continue as at the Beginning? We see the strongest and largest of Trees decay and die away, but this Mother is still the same. And if there is planted in the room of one Tree another of a different Species, yet it does not refuse to give Nourishment thereto, but is as willing to support it as the other, except it requires Contrarities in Nature.

AND as the *Omnipotent* hath given to the several Species the Earth to preserve Life, yet 'tis not entirely to be performed by that alone; for then many Species would be languid and weak, had He not ordained likewise the great Good the *Sun* (as the *Indians* call it) to give a Warmth, and by that to add a Vigour in each Specie which is incomprehensible; for by that Means all the vegetative Part becomes purified, and perfect for the Use of every kind. And this  
great

great Good is so placed as to give his Warmth to every Thing round this Globe for the Nourishment thereof, as none but the *Divine Wisdom* could effect.

AND as Vegetation was the first Act of the Earth to produce all growing Things of every Kind, as Grass, Herbs, Trees, &c. and every Specie having its own proper Seed in itself; so that when the Creation ceased all was perfect, and Births begun, out, in, and by its own Seed, and have produced the same from the Beginning, and will also *ad Infinitum*; all which plainly proves the *Divine Omnipotent Power*, out of which, in which, and by which, all Things are, subsist, and be.

THEREFORE, for the Improving and Preserving of all and every of these Plants, or as many as grow under this Climate; and to add a Benefit to the Increase of the several Species in general, is the Design of this Treatise; and to shew the Advantage that will accrue to the Publick from the Use of Mr. *Thomas Liveing's* Manure; for the Benefit of it is so great that nothing can exceed it.

*First*, As to the Quality, between this and other Manure in general, which the  
U Farmers,



Farmers, Gardeners, &c. use, who commonly carry on each Acre sixteen, and sometimes twenty Loads: And if their Dung, &c. lies in their Yards at home, they must go sixteen or twenty Times with their Team to the Ground when they lay it on; whereas this Manure may be carried in Sacks by one Horse, and sowed on the Land in as little Time as the other can be spread about the Ground after laid on. And suppose you was to manure five Acres, one Waggon or Cart will carry it all at once; but in the other Way you must go for five Acres, eighty or a hundred Times. Again, if your Ground is subject to be wet, you can't carry any, by reason the Wheels so cut the Ground, that the Land will be of little Use; but by this Way you are not under that Danger. Then, if you are to fetch your Dung at a greater Distance, the Charge is much larger; but by using this Manure (one or two Horses carrying two Sacks or a Quarter at a Time) you will avoid these Inconveniencies.

*Secondly*, DUNG naturally breeds Worms, and many other Insects, which prejudice Lands, especially Grass Ground, by casting up the Earth, which is a great Hindrance to Cattle in their Feeding; but this prevents all those Damages, by reason it destroys

stroy all Worms, Grubs, &c. for none can live were 'tis sowed.

*Thirdly*, THE Grounds which are sowed in the Winter Time, with this Manure, are warm'd thereby; it also gives a new Vegetation to the Grass, Corn, &c. and the Frost will not pierce such Lands so deep, as it will others that are not sow'd, by reason of its genial and warm Quality; and both Grass and Corn receive at their Fibres a fresh Nourishment, to support them against the Severity of the Cold: Therefore the Uses of this excellent Manure are so manifold, that when 'tis farther experienced, none will use any other for their Lands; especially in those Countries where they fetch their Soil or Dung at a Distance.

*Fourthly*, WHAT a great Expence attends those Gentlemen, Farmers, &c. who are diligent about their Grounds, to keep them in the best Condition, to make them produce by the old Way of manuring, and the Wear and Tare of Waggon, Cart, Collars, Iron-work, &c. besides Servants Wages; but by cultivating with this Manure, near half of that Charge is saved; and by these Means, the Farmer (being at less Expence) will be the more able to pay his Rent, and support his Family: For by the Industry and La-

bour of the Farmer and Grazier, the Chief of this Nation are supported, in the Production of Grain, &c. for the Nourishment of Life, and Wool for their Cloathing.

T H E R E F O R E the greatest Encouragement ought to be given to both, especially among the trading Part of Mankind, whose daily Labour is designed for that Purpose: And should not the Industrious have the general Bent of all Persons to assist, and give them such a Reward for their Labour, as they and their Families may enjoy a Part with their Fellow-Subjects? But many of them are at present so much depress'd, though they labour a whole Year round, that they cannot maintain their Families, not even in a mean Way; and too many are reduced to the utmost Necessity: Witness the General Complaint of many whose Farms are in their Hands, and can make but little of them; which may be in a great Measure owing to the inhospitable Treatment of the indigent (tho' industrious) Tenant, by seizing on their Persons, or taking all their Stock from them; whereas, if the Landlord would have shewn so much Humanity, as to have enquired into the true Cause, the Calamity might have been prevented, and, perhaps, a numerous Family preserved, that is, only by assisting them  
with



with a little to support them : For it might happen, that for the want of a little more Stock, or a little more Strength of Horses, he might get a better Crop into the Ground, or an Addition of Stock sufficient for his Land, which, being wanted, prevented his paying his Rent ; and the want of this Assistance brought him under this Dilemma : By which means the Landlord suffers more than such an Assistance, perhaps, amounts to ; for thereby he might have been enabled, in a little Time, to repay that with Interest, and all the Arrears of Rent ; and saved a Family, whose daily Labour was for the Benefit of his Landlord ; for though 'tis not conceived so at first, yet in the End it may be found so.

FOR, if he could with such an Assistance go to Market, to add a little to his Stock, or to add a Horse or two to the Number he had, he might have gotten his Farm in better Order for his Seed, from which he might have a better Crop ; and that might enable him, in a Year or two, to pay the old Arrears, and advance something to himself, to supply what was before wanting : This would be great Humanity, and may add a Blessing to the Landlord, and also the continual Prayers of the whole Family, for so charitable an Act ; for no Tenant can  
pay

pay Rent, if his Farm is not stock'd, be it either grazing Land, or plough'd Land, let his Skill and Industry be ever so great; for 'tis the Produce of Beast and Sheep must raise the Rent, either by Feeding or Breeding, and on the plough'd Lands a sufficient Crop, by its Increase, to sell to pay Rent.

AND this may be known by any experienced Person at one View; for if he want Horses, his Ground must lye unplough'd, or if he want Seed, it cannot be sow'd, and for want of Cattle, his Ground runs to Waste; and for want of all, no Produce; by which means the Landlord remains unpaid, and the Tenant ruin'd, to his inexpressible Sorrow.

IT may be an Objection, that it would be hard for a Landlord to find Stock, as well as Land: I grant it is; but if his Tenant be an honest-minded Man, he won't think so: For Money put out this Way, may pay as well, and as good an Interest, as any other Funds; for the Landlord may at all Times see his Principal on his own Lands (except at the Time the Crops are selling) and even then it is disposing of for his Use, in case the Tenant is honest in the Disposal thereof.

*Again:* SHORT Leafes is what a Landlord suffers much by; for a poor Man is afraid

afraid of improving his Farm, through Fear of being turn'd out at the Expiration of his Lease, or having his Rent raised: And if you meet with a politick One, he'll harraß it so much, on account of his Lease being short, that when it is expired, he'll leave it quite out of Heart: so that the Landlord, suffers both Ways, and his Lands fall into his Hands greatly impoverish'd, and it must cost a large Sum to bring them into Order again; Nay, when 'tis in the Landlord's Possession, if he does not meet with an experienc'd Person, he may lose Part of his Principal, as well as Interest, which has been the Case of too, too many Gentlemen, whose Lands are in their Hands: And therefore an honest Tenant ought to have all due Encouragement that is possible; it being the Interest of both, that the Landlord should have his Rent paid, and that the Tenant live to support his Family, by which means the Lands will be cultivated, and not abused; nor will any of the former Inconveniencies happen; besides, the Tenth's of the Clergy will be almost doubled: Thus every one will reap the Advantage of it.

BUT to return to the Manure: The Account that is given by an eminent and learned Gentleman near *Croydon* in *Surry*, is worthy to be taken Notice of (as it is at the latter



latter End of this *Treatise*) though not so perfect as it might be wish'd, had he not been prevented by Absence: The Intent of his Tryal was very just, in respect of the Quantity, and Quality of it, though the Time of Sowing was quite out of Season: *First*, as to the Quantity; the Proportion of the Soil or Dung he mixed with the Earth that each Grain was set in; the Produce which each Sort brought forth, both of the Number of Stalks, and Ears of each Grain, as well as of Goodness and Strength. *Secondly*, the Experiment that he made of several Grains put into Flint-Glasses, with white Sand, (which is counted the poorest, and most barren Part of any earthy Quality) and though they, by the Misfortune of his Absence, were destroy'd, whereby there was no Produce, yet this Observation makes for the Manure, that those two Glasses that had Manure mixed with it, though but a small Quantity, yet while there was Moisture left in the Earth, it did shew its Force towards Vegetation, as both those Glasses were filled with small Fibres from each Grain; which, if they'd had Moisture, must, according to the Course of Nature, have produced Strength of Stalks, as well as Number of Ears, which the other two Glasses had not; by which 'tis plain, that if this Manure, by its hidden Quality, will produce from the  
Seed

Seed sown such a Quantity of Fibres for its Support, from the most barren of Lands, they must then from thence have had Strength, both of Stalk and Ears, to have brought forth a Produce; and this an evident Demonstration, that it will produce from the poorest, as well as the better cultivated Land, and that no Person need fear but his Land, as well as himself, will reap a Benefit from it.

AND thus having nothing more to add, but following the Direction which the *Divine Power* hath given to be a Light to our Understanding, to use what will accrue to the Advantage of all; for before the Loadstone was discovered, when the Mariner failed only by Coasting, for want of that Knowledge, which they have now obtained, so this Manure appears as valuable a Secret, and will, no doubt, in Time be so improved, as to render it more and more beneficial, which will be more certainly manifested in its wonderful Effects; therefore may the Glory thereof return to the *Great, Creator* of all Things, *in whom we live and move, and have our Being.*

*The Tarriffe of the Farm belonging  
to Sir John Goodman, in the  
County of Kent, lett to James  
Plowman for 21 Years, by Lease  
dated the of 1720.*

The House Field, containing 20 Acres

The 10 Acres Piece next the Dove House

The 20 Acres next the Road - -

The 30 Acres near the Mill - -

The 40 Acres next the Wood - -

The 15 Acres by the watery Lane -

The 25 Acres near the Hill - -

The 22 Acres next the Meadow -

The Meadow Ground along the River 30  
Acres - - - - -



Oaks	Ash.	Elm.	Quick Hedge.	Dead Hedge.	Pails.	Rails.
10	20	15	N.	S.	W.	E.
20	15	10	N. W.	E.	S.	
6	10	20	S. W.		N.	E.
15	20	15	Round			
30	15	10	N. E.	S.	W.	
9	10	12	E. S.	N. W.		
15	12	10	W. S.	N.	E.	
12	10	9	N. W.	E.	S.	
20	15	14	N. E.	W. S.		

Acres	The Sorts of Grain.	The Annual Expence of a Farm, consisting of 180 Acres of Arable, and 20 Acres of Meadow and Pasture, supposed to be Lett at 100l. per Annum.
70	WHEAT	<div>l. s. d.</div> For Seed, 2 Bushel $\frac{1}{2}$ per Acre, at 4s. 6d. per Bush. is 39 07 6 For Manure, at 12s. per Acre, is - - - 42 00 0 For Reaping, at 5s. per Acre, is - - - 17 10 0 For Stacking and Thatching - - - 2 10 0 For Threshing 350 Quarters, at 2s. per Quarter, is 35 00 0 For Incident Charges and Expences, &c. - - 1 02 6
25	PEASE	For Seed 4 Bushel per Acre, at 3s. per Bushel, is 15 00 0 For Manure, at 12s. per Acre, is - - - 15 00 0 For Pecking, Cocking, &c. at 3s. per Acre - 3 15 0 For Stacking and Thatching the Ricks - - 1 05 0 For Threshing 125 Quarters, at 1s. 3d. per Quart. 7 16 3 For Incident Expences, &c. - - - 1 00 0
20	BEANS	For Seed 4 Bushel per Acre, at 2s. 9d. per Bushel, is 11 00 0 For Manure, at 12s. per Acre, is - - - 12 00 0 For Mowing, Cocking, &c. at 3s. per Acre, is 3 00 0 For Stacking and Thatching the Ricks - - 1 00 0 For Threshing 100 Quarters, at 1s. 3d. per Quarter 6 05 0 For Incident Charges and Expences - - - 1 00 0
15	BARLEY	For Seed 4 Bushel per Acre, at 2s. 3d. per Bushel, is 6 15 0 For Manure, at 12s. per Acre, is - - - 9 00 0 For Mowing, Cocking, &c. at 3s. per Acre, is - 2 05 0 For Stacking and Thatching the Ricks - - 1 00 0 For Threshing of 75 Quarter, at 1s. 3d. per Quarter 4 13 9 For Incident Expences, &c. - - - 1 00 0
15	OATS	For Seed 4 Bushel per Acre, at 2s. per Bushel, is 6 00 0 For Manure, at 12s. per Acre, is - - - 9 00 0 For Mowing and Cocking, at 3s. per Acre, is 2 05 0 For Stacking and Thatching the Ricks - - 1 00 0 For Threshing of 75 Quarters, at 1s. 3d. per Quarter 4 13 9 For Incident Charges and Expences - - - 1 00 0
35	FALLOW	
20	MEADOW	Grafts. For Manure - - - - - 12 00 0 Rent, per Annum - - - - - 100 00 0 Tithes and Parish Duties - - - - - 30 00 0 Wages for three Men, at 7l. per Ann. - - 21 00 0 Board for three Men, at 5s. per Week each - 39 00 0 For 30 Quarters of Oats for the Horses - - 21 00 0 For 7 Quarters of Beans - - - - - 7 00 0 To Blacksmith, Wheelwright and Collar Maker 25 00 0 To keep the Fences in Repair, per Ann. - 25 10 0 For Incident Expences per Ann. - - - 22 07 6
200		

The  
Expence  
each C

l.

137

43

34

24

23

302

567

Acres sown, s. d.	The Total Expence of each Grain.	The Produce in Quarters per Acre.	The whole Produce of the said Farm, be- ing dressed with the Compound Manure, per Ann.
07 6 00 0 10 0 10 0 00 0 02 6	137 10 0	5 Quarters per Acre.	In all 350 Quarters, sold for 4s. per Bushel, is } 560 00 0
00 0 00 0 15 0 05 0 16 3 00 0	43 16 3	5 Quarters per Acre.	In all 125 Quarter, sold for 2 s. 9 d. per Bushel, is } 137 10 0
00 0 00 0 00 0 00 0 05 0 00 0	34 05 0	5 Quarters per Acre.	In all 100 Quarter, sold for 2 s. 6 d. per Bushel, is } 100 00 0
15 0 00 0 00 0 05 0 00 0 13 9 00 0	24 13 9	5 Quarters per Acre.	In all 75 Quarter, sold for } 60 00 0 2 s. per Bushel, is
00 0 00 0 05 0 00 0 13 9 00 0	23 18 9	5 Quarters per Acre.	In all 75 Quarter, sold for } 52 10 0 1 s. 9 d. per Bushel, is
00 0 00 0 05 0 13 9 00 0			Total Produce - - 910 00 0
00 0 00 0 05 0 13 9 00 0			Total Expence - - 567 01 3
			Total clear Profit - 342 18 9

*N. B.* In the aforesaid Computation there is no Allowance for Straw nor Chaff, which is always reckoned to answer and pay the Expence of Threshing and Clearing Corn, £*s*.—And yet the Expence is rather charged at more *per Ann.* than they will amount to, £*s*.—But the yearly Produce at lefs, (in every particular Sort of Grain) as will appear. — The Prices of the said Grain are set at a Medium. — Therefore the clear yearly Profit will be more than is in the foregoing Computation.

**N. B.** The Manure need not be used but once in three Years.





*An EXPERIMENT tried by a worthy Gentleman of Learning upon the Motion of Vegetation on several Grains of Barley, for his own Curiosity, on account of this Manure; (But 'tis not so perfect as I could wish, though 'tis deliver'd as from his own Hand-writing) which is as followeth, viz.*

**J**UNE 9, 1730, I set several Barley-Grains, in small Boxes, exactly alike, *viz.* six Inches deep and four Inches square; and great Care was taken that the Mould or Earth might be exactly alike.

No.

1. A plain Barley-Corn, without any Addition of Manure.
2. Ditto.
3. Ditto.
4. A Barley-corn with 300 Grains of fine rich rotten Horse-Dung.
5. A Barley-corn with 592 Grains of ditto.
6. A Barley-corn with 16 Grains of *Living's* Manure.
7. A Barley-corn with 32 Grains of ditto.
8. A Barley-corn with 64 Grains of ditto.

*Aug.*

*Aug.* 25, they were all ripe, and yielded as followeth ;

No.

1. Five Ears ; *viz.* two fine large Ears and three small Ears.
  2. Five Ears ; *viz.* three fine large Ears and two small Ears.
  3. Was destroy'd by Accident.
  4. Seven Ears ; *viz.* five fine large Ears and two small Ears.
  5. Nine Ears ; *viz.* Five fine large Ears and four small Ears.
  6. Eight Ears ; *viz.* Six fine large Ears and two small Ears.
  7. Eleven Ears ; *viz.* Seven fine large Ears and four small Ears.
  8. Seven Ears ; *viz.* Five fine large Ears and two small Ears.
- N. B.* No. 8. came up quite poor and yellow, and continued in a sickly State for sixteen or seventeen Days, when I thought it would have died, but at last it recover'd by Degrees.

THE Number of Grains in each Ear I counted very carefully, but having set it down on different Scraps of Paper, they are lost : The same Fate has undergone the Weight I took of the Haulms and Roots, as also the Computation which I made at  
that

that Time of Dung, and of Mr. *Liveing's* Manure, upon an Acre, and the Reasons I had for allowing the above-mention'd Quantity upon a single Grain: But, to the best of my Remembrance, the 592 Grains was at the Rate of sixteen Loads of Dung to an Acre; and as to Mr. *Liveing's* Manure, I think the greatest Quantity which is used came to sixteen Bushels to an Acre: But that may easily be computed, when one knows the Weight of a Bushel.

THAT every Grain which was set might be alike in Goodness, great Precaution was used, not only by Sight, but by nice weighing each Grain. I set, at the same Time, two Grains of Barley in two different white Chrystal Glasses, quite plain, and two Grains in two other Glasses, with eight Grains of Mr. *Liveing's* Manure to each: The Glasses held each about a Quarter of a Pint of Wine Measure to each: Instead of Mould, I filled each with white Sand, for which Reason I watered them Morning and Evening when it did not rain.

THE 26th of *June* they were all come up: Soon after I was obliged to be absent for near four Weeks; when I came Home I found them all quite dead,

BUT



BUT what was remarkable is, that the two Glasses with the Manure were both lined, or matted, all round with small Roots, like fine Hair, whereas hardly any Fibres could be seen through the Glasses in the other two.



LETTERS *to* Mr. LIVEINGS,  
*concerning his* Manure.

*Newnham near Nettlebed,  
Oxfordshire, July 24, 1730.*

S I R,

ACCORDING to your Desire, this comes to acquaint you, that I sowed eight Acres of Wheat Land with your Manure, and at the same Time dunged the rest of the Field very well; but your Manure has far exceeded the Dung, and produced a very great Crop, there being from ten to thirty Stalks, with very large Ears, from one single Kernel; and it is so clear of Weeds, that I did not think fit to weed it. I also dressed about six Acres of Barley with your Manure, and it is the best Barley in all our Neighbourhood. I likewise mended about four Acres of Pease with it, and two Acres in the same Field with Pitch Marks, but

Y

yours

yours so far exceeded it, that any one might see the Difference. I tried it also on some Oats, and it made them tiller so well, that some of them produced above sixty large Stalks from one single Grain : And I sow'd it on about six Acres of Clover, and had three Times as much as I had from the other six Acres, which I did not dress with it ; and I believe I shall have two Load from an Acre of the latter Crop ; All the Land I sowed it on is a cold Clay, which is all the Account I can give you of it at present, and is what can be justified by a great many of the neighbouring Farmers, who saw it as well as

*Your humble Servant,*

SAWRAY LOVEJOY.

S I R,

UPON my Arrival from *Tunbridge* last Night, I met with your Letter, desiring an Account of the Produce of my Land dress'd with your Manure : I can only repeat what I told Sir *Richard Lane* and others, who have enquired of me about it ; which is, that one of my Tenants at *Chebbunt* in *Hertfordshire* went away two Years Rent in my Debt, and left my Land in so  
bad

bad a Condition, that I was forced to take it into my own Hands. I plough'd it three Times, and the third Time of ploughing I dress'd three Acres and half of it with eight Quarters of your Manure, and then plough'd it again, and sow'd it with Oats, and laid it down with Rye Grass and Clover: From those three Acres and half I had twenty-six full Cart-Loads and half of Oats, which most of the Farmers about me were greatly surprized at, and think it will produce above forty Quarters; but I may venture to assert it will produce above thirty: The Rye Grass and Clover is come up very thick and fine, and likely to prove a very good Crop, which is the Account I gave Sir Richard Lane of it, and is true, and all that can be given of it by

*Your humble Servant,*

*Lincoln's Inn Square,*

*Sept. 2. 1732.*

DAN. DODSON.

N. B. *When the Oats were threshed some Time after, there were 36 Quarters and a half.*

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*Friend LIVEINGS,*

**T**HOUGH the Manure I had of you came too late, yet by the Help of the wet Weather, I think I shall have a good Crop of Barley; though mine was sown two Months later than any in the Field.  
I have



I have ordered my Friend in Town to bespeak Manure for fifteen Acres of Land for Wheat, which pray send speedily; for it grows late; and let me and Mr. *Bramston* of *Oundle* have Notice when it is put on board, that he may send a Lighter for it; and I think to meet it. Pray what is the lowest Price of the Sacks? I expect some considerable Allowance for my Services, and shall carry some to see my Crop, and represent it for your Service.

I am, Yours,

Cambridge,  
Aug. 15. 1730.

C. CHAMBERS.

N. B. That as this Manure is likely to prove of very great Consequence to the Nation; so Application will soon be made to the Legislature, to give a Compensation to the Patentee, who is then to give Direction to the Publick how to make it for the Use and Profit of every one.

See the Book, called *The best Mine above Ground*, which gives a very particular Account of this Manure.

F I N I S.

ERRATA. Page 25. Line 8. for *Tarde* read *Trade*.  
Page 123. Line 16. for *Trittalaria* read *Frittalaria*.